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MARCH 1957

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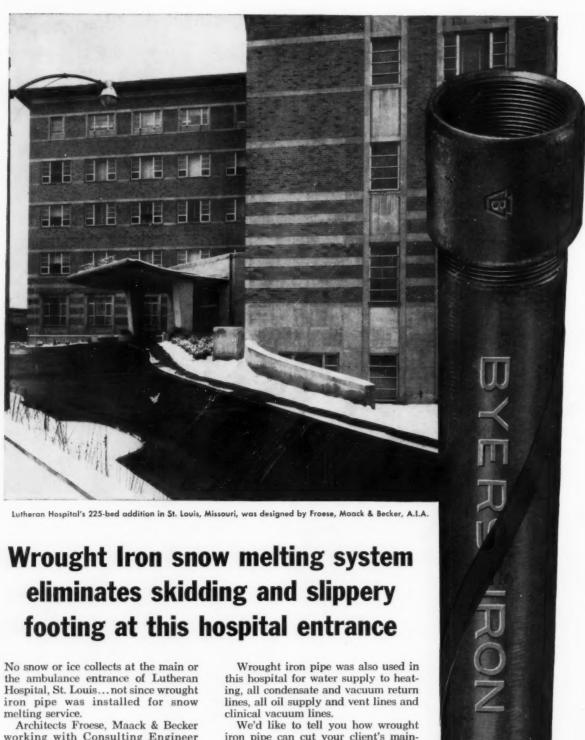
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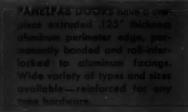
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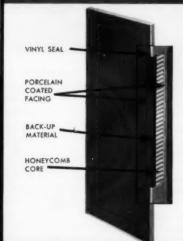
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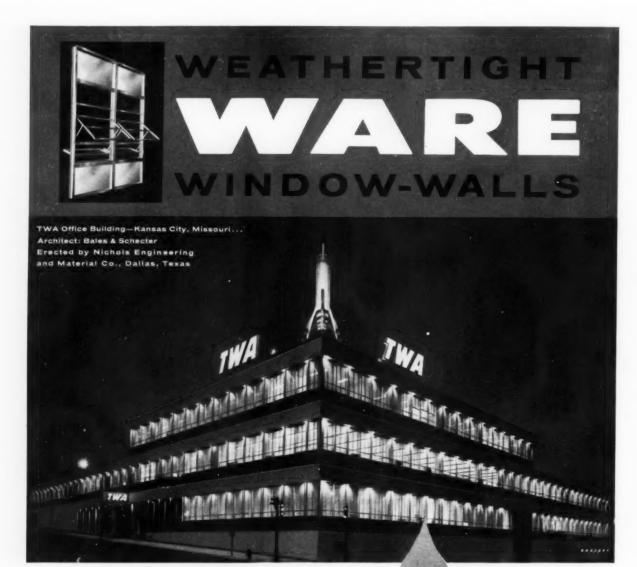
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THE RECORD REPORTS

PERSPECTIVES

LITTLE GOLIATH: The SMALLEST chapter of the American Institute of Architects is in TEXAS, according to the listing in the A.I.A. 1956–57 Membership List.

Democracy: Among eight "Phoenix men" welcomed as "newly registered architects" in a recent issue of the Central Arizona A.I.A. Monthly Bulletin was Frank Lloyd Wright (whom the State of Arizona suddenly noticed last year was not on its architectural registration list).

The ladies, bless 'em: An anonymous letterwriter in the January issue of Redbook, responding to an earlier article on "How to Avoid Outgrowing Your Home," had a forthright prescription of her own — "The problem in a nutshell is simply this: male builders are stupid. They are busy in their offices drawing up blueprints, while we housewives have to make do with the homes they think we want. What we need is more women architects."

GOLDEN TOWERS AND BALLAD SING-ERS: You can't get away from news of aluminum these days. There's Kaiser with its very own geodesic dome out in Hawaii (pages 251-254). There's Reynolds with its \$25,000 annual architectural award, and its two-volume work "Aluminum in Architecture." There's Alcoa with its new product development program that includes an annual home design conference to be inaugurated this year (April 11-13) under the chairmanship of Pietro Belluschi, and its traveling "exhibit" starring ballad singer Josh Wheeler and a Broadway cast to point up the contributions of aluminum-clad insulation to economical home heating and cooling. Then there's just the simple fact that aluminum isn't necessarily gray any more, but that's about like trying to convince yourself that snow isn't necessarily white. Probably the most romantic result so far is the idea of 'gold" aluminum, which will be used in a skyscraper for the first time on the 34-story tower projected for

575 Lexington Avenue in New York by Sam Minskoff and Sons, Inc., builders (Sylvan and Robert Bien, architects). At the press luncheon where details of this project were announced, Reynolds had its "sales manager for monumental construction," A. H. Williams, to answer the technical questions, and he provided a rather provocative sidelight on another project of another material. In response to a query on whether the anodizing process could match the color of the Seagram's building now going up at 375 Park in - as everybody knows by now - bronze, Mr. Williams asserted that it not only could but had, for the benefit of the Seagram's building committee. To the remark of "a certain young lady" on the committee that "it won't turn green with age, though, will it?" Mr. Williams acknowledged (with obvious pride) that "we are pleased to say it would not!" While Mr. Williams' point was, of course, the durability of the finish, it is an interesting footnote that green is one of the few colors the anodizing process has not yet been able to produce to Reynolds' satisfaction: they can do chartreuse, but — so far — no green.

THE CONSTRUCTION OUTLOOK as revealed in F. W. Dodge's Corporation's monthly tallies of construction contracts awarded will have a new look this year whatever the construction trends may be. Statistical coverage of construction indicators is being expanded to include the 11 western states as well as "the 37 states east of the Rockies" long covered by analysis of Dodge Reports. (Details on page 430.) To get the 1957 picture still farther in advance, the source is, of course, "Brakes and Accelerators," the latest edition of the annual Dodge preview of future construction potentials (AR, Nov. 1956). The 1956 preview turned out to be right on the nose: not only on the estimated increase in construction contracts (three per cent) but on the pattern of the changes: an increase in nonresidential building, plus an even greater increase in heavy engineering activity, partly offset by a moderate decline in housing.

No decline in housing, by the way, was expected in the Dodge preview for 1957. The estimate was for a small increase in new nonfarm dwelling units (from an estimated 1,100,000 in 1956 to an estimated 1,125,000 in 1957), no change in floor area, and a six per cent increase in total dollar volume. In the midst of the current hue and cry among home builders about the money crisis, it is also interesting to note that while FHAand VA-financed mortgages declined in January, conventionally-financed mortgages for residential construction actually showed an increase (details on page 430), following a trend established in 1956.

Automation in 1790: It keeps being repeated that there's nothing new about "automation" except the current excitement about it, but who can cite an 18th century example of an "automatic factory?" - Square D. Company, manufacturers of electrical control equipment of the kind used to actuate automatic manufacturing operations, came on one some time ago in the course of some research in the automation field. It seems that in 1790 one Oliver Evans opened a completely automatic flour mill on the banks of a little creek near Philadelphia. The mill, powered by a water wheel, could turn out 300 bushels of flour an hour from grain fed to a bucket conveyor and then moved, entirely by water power, through a numerous succession of belts, screw conveyors, and coarse and finish grinding operations.

DESIGN IN CONTINUITY, the concept of designer Frederick Kiesler of the "endless house" schemes, has found expression in a newly-opened New York art gallery — World House (in the Carlyle Hotel, Madison Avenue and Seventy-seventh Street). The interiors, whose walls "flow" into the ceiling and whose stairs "float" above their cantilevers, were done in association with architect Armand Bartos.

THE RECORD REPORTS

BUILDINGS IN THE NEWS

HHFA STUDIES NEW YORK'S LINCOLN SQUARE PROPOSAL

Plans for the nation's most ambitious urban redevelopment scheme, New York's proposed Lincoln Center for the Performing Arts, have been filed with the Housing and Home Finance Agency by the Mayor's Committee on Slum Clearance (Robert Moses, chairman), along with an application for a Federal grant under Title I of the housing act. Under the proposal, the Federal government would contribute \$33,470,075 and the city \$16,735,038 to acquisition of the site; private redevelopers are expected to spend \$178,206,000 for a total project cost of \$228,411,113.

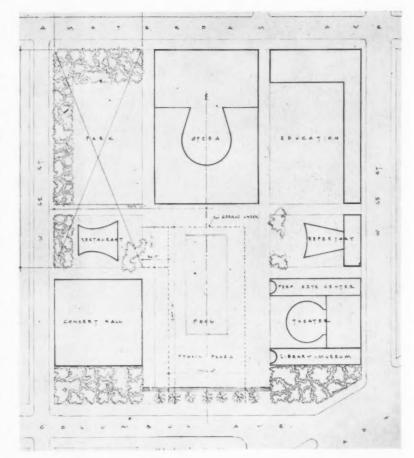
The scheme for the 80-acre site (plan at right) has been developed by an international committee of consulting architects working with architects Harrison and Abramovitz of New York. The group includes Sven Markelius of Sweden, Alvar Aalto of Finland, Marcel Breuer, Philip Johnson and Henry Shepley of the United States.

The new home of the Metropolitan Opera (seating 3800), the New York Philharmonic's Concert Hall (2800), the Repertory Theater (1000) and the Theater for ballet (2200) all face the central plaza. Juilliard School of Music, with a curriculum broadened to include drama, will occupy the education area.

PRUDENTIAL GIVES BOSTON ITS BIG BACK BAY CENTER

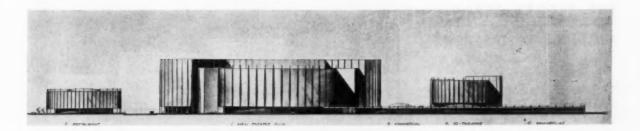
A multi-million-dollar business, civic and residential center to be financed largely by Prudential will be built on a 31-acre site in Boston's Back Bay district under plans for "The Prudential Center" announced January 31 by the Prudential Insurance Company of America. Hoyle, Doran and Berry of Boston (successors to Cram & Ferguson) are the architects, Metcalf & Eddy of Boston the engineers, and Pereira & Luckman of Los Angeles and New York the coordinating architects.

The site — more than twice the size of Rockefeller Center — is comprised of 28 acres now the Back Bay Yards of the Boston and Albany Railroad, on which Prudential acquired the option held by New York realtor Roger Stevens (for whom the "Boston Center Architects" developed a now-defunct scheme four years ago — AR, Oct. 1953, facing page 142) and another two and a half acres in adjoining parcels. Site cost is estimated to exceed \$5 million.





50-story \$50 million tower, Prudential Northeastern regional home office, will be surrounded by (right) 1250 apartments in four towers and long structure behind them; (left rear) proposed 1000-room hotel to be built by "private interests"; (left foreground) civic auditorium to be erected by City of Boston; (center foreground) circular restaurant flanked by store and office buildings. Glass-walled covered walkways connect the buildings



AMSTERDAM AVE THE COM THE CO

LOWER LEVEL

ROGER STEVENS PROMOTES DREAM THEATERS FOR LINCOLN SQUARE

Neighbor to the north of the Lincoln Center for the Performing Arts (acrosspage) will be — if Roger Stevens' dreams come true — this complex of six theaters plus restaurants and commercial facilities designed for an investment group Mr. Stevens heads by the architectural firm of Pereira and Luckman to embody theatrical concepts of the noted scene designer Jo Mielziner. Overall cost of the project is estimated at \$35 million.

Both for performers and playgoers, the plans would offer not only a new

ORCHESTRA

UPPER LEVEL

experience in theatrical techniques but a new high in amenities.

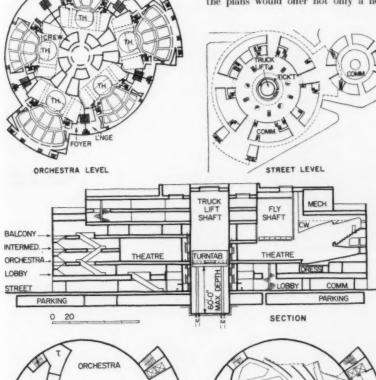
Five of the theaters would be under one roof in a seven-level scheme that puts orchestras on the third level, with balconies, bars and lounges, and private club facilities on four levels above, and central lobby, with display area, bar and lounge and performers' dressing rooms on the level below, leaving the street level free for rentable commercial space, except for central ticketing facilities to serve all five theaters.

A new design for the stage developed by Mr. Mielziner, combined with his determination to hold the maximum house depth to 80 ft for optimum visual and acoustical conditions and the need to attain an economic seating capacity, produced the fan-shaped plan of the theaters: a scheme which by extending the stage apron onto the orchestra floor and widening the area between the theater's side walls has achieved both a larger usable playing area and a larger seating capacity without increasing the depth of the orchestra floor.

Once the fan shape of the individual theaters was established, the circular concept for the five-theater complex became almost inevitable - and a complex that would let theaters share complicated and expensive service facilities was wanted both for economy and for operating efficiency. A key element in the scheme evolved is the central turntable truck lift for moving sets from basement garage to the stage of any of the five theaters; this not only greatly reduces handling time but expense, by eliminating any street-handling trucks will drive down ramps right into the garage and onto the turntable and thus obviating the need for one of the three crews normally required.

The sixth theater, known as the "Q" theater, was developed separately as an even more advanced and experimental concept—it will, for one thing, eliminate scenery and expect the most advanced lighting techniques to do the whole job of creating scenic effects.

(More news on page 12)



THE RECORD REPORTS

BUILDINGS IN THE NEWS

(Continued from page 11)

PROPOSALS SUBMITTED FOR NATIONAL CULTURAL CENTER

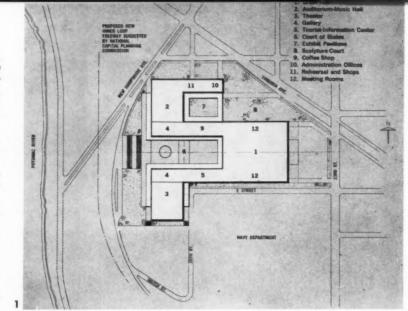
Plans for a \$36 million national civic auditorium and cultural center on one of three proposed Washington, D. C., sites ranging in size from 18 to 27 acres were under discussion last month following submission to the President of the recommendations of the 21-member District of Columbia Auditorium Commission created by Congress in July 1955 to formulate plans for the design, location, financing and construction of the center.

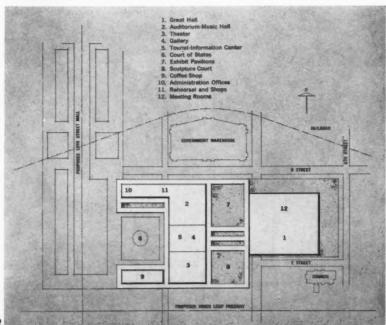
The proposals, contained in a 95page report illustrated with renderings and plan studies, were developed with the aid of a Technical Planning Board which included seven architectural firms and Stanford Research Institute. Pereira & Luckman acted as coordinators of the Planning Board. Other members are: Faulkner, Kingsbury & Stenhouse, Washington, D. C.; Giffels & Vallet Inc., L. Rossetti, Detroit; Holabird & Root & Burgee, Chicago; MacKie & Kamrath, Houston; Reynolds, Smith & Hills, Jacksonville: Shepley, Bulfinch, Richardson & Abbott, Boston. All served without compensation.

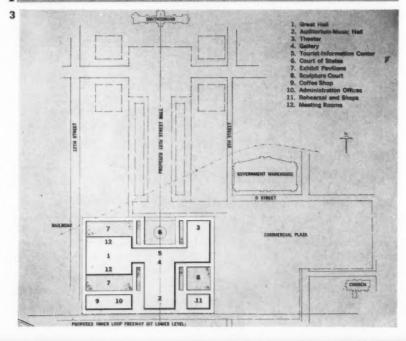
Major construction costs of the Center would be raised by private subscription, according to the Commission's recommendations, but it is hoped that the Congress will supply the site. Revenues from rentals, concessions and parking estimated at some \$487,000 annually, are expected to cover operating expenses.

(More news on page 16)

SITE PLAN STUDIES of the three "suitable site locations" recommended by the Auditorium Commission: 1. Foggy Bottom — South, on a rise above the Potomac and closest of the three to hotels and the capital's population center, was preferred by the Commission; the A.I.A. also endorsed it. 2. Southwest Redevelopment Area — East Site. 3. Southwest Redevelopment Area — West Site. The first two sites are approximately 27 acres; No. 3 is about 18 acres. 4. Rendering described as "overall" aerial view of proposed facilities









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The amount of noise to be transmitted from this grand concourse to the office areas above is reduced by a suspended acoustical ceiling, east side airlines terminal, new york city, N. Y.: Architect: John B. Peterkin; acoustical contractor: william J. Scully acoustics corp.

How acoustical ceilings help solve

The standard answer to problems of noise transmitted from one room to another has been airtight mass—solid masonry. This type of construction is not always practical. However, acoustical ceilings can help alleviate noise problems caused by lightweight construction.

1. The Role of Acoustical Materials

Acoustical materials reduce the intensity of sound where it originates, hence there is less sound to be transmitted. They can also reduce the intensity in the adjoining area after sound is transmitted.

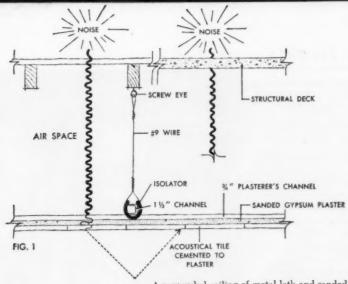
2. Transmission from Floor to Floor

Here is one construction method to help keep sound from traveling from one floor to another. First, suspend a false ceiling of metal lath or wood framing, cover it with sanded gypsum plaster, and install acoustical tile on the underside (Fig. 1). This provides an airtight membrane, adequate mass, and an air space above the suspended ceiling that helps minimize sound transmitted to the room below. And, of course, the acoustical material absorbs much of the transmitted sound in this room.

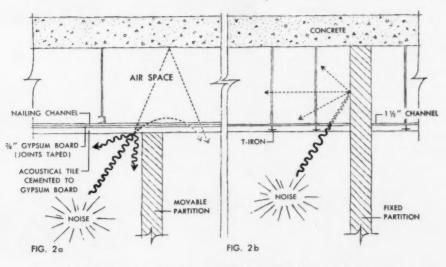
3. Transmission between Adjoining Areas

Acoustical materials can also help control the level of sound in adjoining areas. Much transmission occurs through walls, but some is also transmitted through continuous ceiling construction (Fig. 2a). To help minimize this, a different type of construction should be used with movable than with fixed partitioning. When movable partitioning is used, the acoustical material should be backed up with a membrane that is impervious to air and with good sound transmis-





A suspended ceiling of metal lath and sanded gypsum plaster can be dropped by wire to provide mass, an air space, and an airtight barrier to minimize the flow of sound. An isolator can also be wrapped over the metal supporting channel. The acoustical material provides the sound absorption required in the room below.



A membrane of %" gypsum board should be installed behind acoustical tile for added mass, unless partitioning is joined to structural ceiling.

sound transmission problems

sion loss (Fig. 2a). Three-eighth-inch gypsum board with all edges taped is highly efficient. This construction has adequate mass and an airtight membrane that help reduce the flow of sound through the ceiling.

When the partition is extended through the acoustical ceiling to the underside of the slab above, the acoustical ceiling requires no special backing (Fig. 2b). The wall acts as an effective barrier to the transmission of sound.

In both types of construction, acoustical materials reduce the intensity of sound before and after transmission.

For details on how Armstrong acoustical materials can help you solve sound transmission and other noise problems, see your Armstrong Acoustical Contractor. An expert in his field, he is familiar with all types of sound conditioning and can recommend a material to satisfy every job need.

For free booklet, "Armstrong Acoustical Materials," filled with data on the latest sound-conditioning methods and materials, write Armstrong Cork Company, 4203 Rock Street, Lancaster, Pennsylvania.

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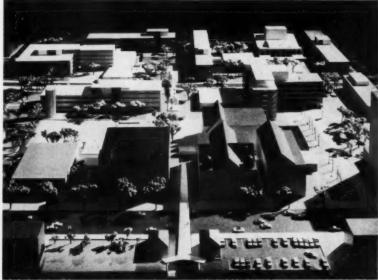
(Continued from page 12)

TEMPLE UNIVERSITY BUILDS: MASTER PLAN FOR 100 YEARS

A really long-range approach to its expansion problems is taken by Temple University of Philadelphia, where immediate building requirements are being considered in the context of a master plan for the next 100 years as developed by Nolen and Swinburne, architects.

The plan is conceived in three phases: first, buildings immediately needed; second, buildings known to be required in the future; third, buildings required in the future "whose need cannot now even be imagined."

The first phase, for which Nolen and Swinburne have completed preliminary design of the buildings (see model photo), will add a total of 650,800 sq ft to the university's building area in a science group consisting of chemistry, physics and biology buildings and a "special facilities" group consisting of a School of Business, a Teachers College and a Communications Center. In the second phase, the university will add another 655,000 sq ft in a student union addition, physical education building, men's

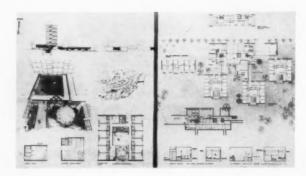


Courtland V. D. Hubbard

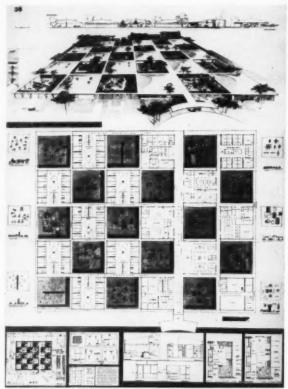
dormitory, library addition, law school, additional classrooms, women's dormitory addition and power plant addition. For Phase III purposes, the master plan reserves 12 acres of ground.

In plan, Temple is now, as the architects put it, "compressed into a ribbon along Broad Street, . . . bounded by noise on the west and south; by city

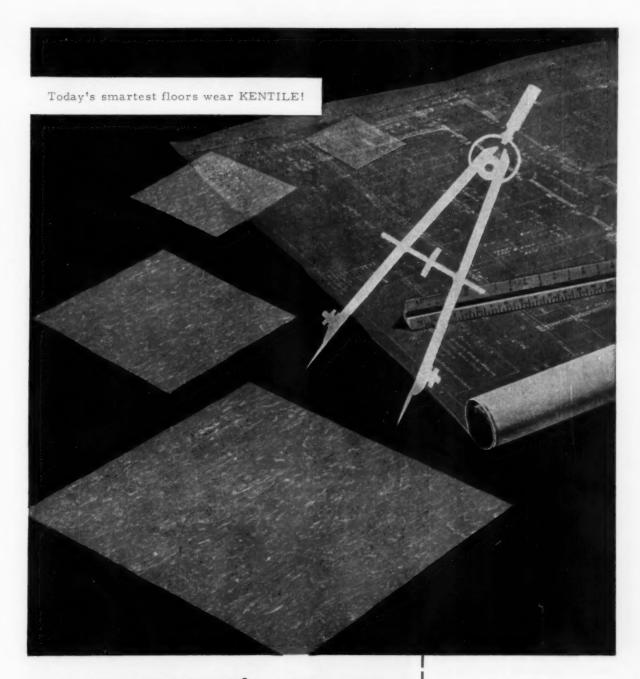
blight on the east and north." The master plan provides for expansion over an additional 16 acres of ground, blighted areas and streets eliminated. Open areas and courts within the campus (as in photo here) are studied as carefully as the buildings in the effort to create an environment which will have "a feeling for people and the quality of human scale."



CREDITS IN HOME FOR THE AGED COMPETITION In the presentation published in the January issue of the RECORD of the prizewinning designs in the Home for the Aged Competition, there occurred in the case of two of the Honorable Mention winners a transposition of credits which the RECORD, of course, very deeply regrets. These schemes (pages 166-167 in January), shown here in photographs of their presentation boards, are correctly identified as the work of (above) Bellante & Clauss, Philadelphia: Hans G. Egli; and (right) Architects Associated, New York City: Sidney L. Katz, Taina Waisman, Joseph Blumenkranz, Richard G. Stein, Read Weber - Consultants: Costantino Nivola, Jerome L. Strauss, Patrick S. Raspanle, Ricardo Scofidio. The competition was sponsored by the National Committee on the Aging of the National Social Welfare Assembly, co-sponsored by Architectural Record and The Modern Hospital



(More news on page 16B)



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Available in Rubber, Cork, Vinyl Asbestos, Solid Vinyl, Cushion-back Vinyl, and Asphalt Tile...over 150 decorator colors.

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slabs also available for custom designs.)

COLORS: 17 exciting marbleized colors.

THICKNESSES.

THICKNESSES: 5/64", 1/8", 3/16".

THE RECORD REPORTS

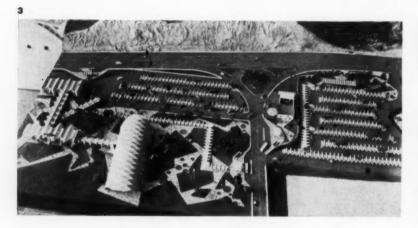




FOR ITS TOURISTS, VENEZUELA BUILDS "TELEFERICO"

At a cost of about \$15 million, Venezuela recently completed "Teleferico," claimed to be the longest funicular in the world (1). Also part of the project: the Hotel Humboldt (4) at the top of Mt. Avila, where it overlooks Caracas on one side (2) and the Caribbean. The hotel was designed in the round, by

architect Tomas Jose Sanabria, to take the greatest advantage of the view. At the base of the cable is a concrete passenger station with restaurant and parking (3). The cost of the project includes three more funiculars, planned for the future. Chief engineers were Gustavo Larrazabal and V!adimir Bertrans.





FOR ITS PERSONNEL, THE AIR FORCE BUILDS HOUSING IN SPAIN

In conjunction with its bases now under construction in Spain, the U. S. Air Force is planning 2000 housing units to provide living space for its personnel, and, not incidentally, to restore civilian units to the Spanish market, already strapped for rental housing.

The new communities, to be built at Madrid, Zaragoza and Seville, will be financed and built by Spanish firms, operating under the Air Force's "rental guaranty" agreements. Under this system, the Air Force guarantees the sponsors 75 per cent of rental for a period of at least seven years, and has the option to extend rental, and guaranty, beyond that period.

Although the designing of the communities was done ostensibly by the Spanish, in the case of the Madrid and Zaragoza developments (typical house design, right) designed by the Royal Oaks firm, with B. Luis Laorga Guiterrez and D. Jose Lopez Zanon as architects, the firm retained Ernest Kump,

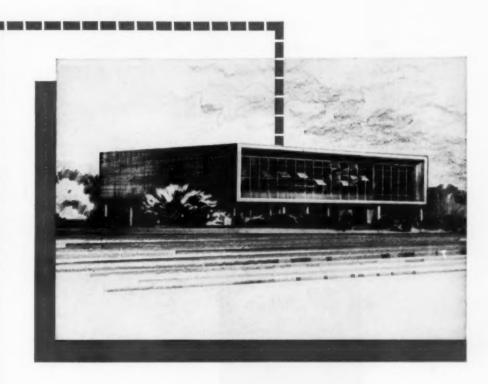


F.A.I.A., as consultant in an effort to meet American domestic requirements in the designs, and to retain "a high residual value" for future Spanish use.

The accommodations at Madrid and Zaragoza will be chiefly four-unit houses, each with separate entries, garden and terraces. Most of them will rent for \$80-\$150, although a few higher priced units will be provided for senior officers. The community will also include schools, shopping center, recreation areas and religious facilities.

The Seville project, still in the planning stage, will be built by the Santa Clara Urban Corporation.

(More news on page 21)



Out of Sight-Line...



BILCO Type L Roof Scuttle for normal stairs to the roof

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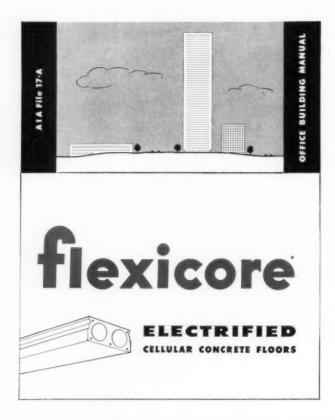
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How to Electrify Precast Concrete Floors

This new manual on Flexicore Electrified Floors is for architects, engineers and contractors.

It gives the architect the overall picture on the use of this system in a one-story, two-story or multiple-story office building, including savings in fireproofing, construction time and materials.

It gives the structural engineer design information on the framing for Flexicore long-span construction, plus typical structural details and a design example.

It gives the electrical engineer specific de-

tailed information about this underfloor electrical distribution system, and includes typical distribution layouts.

It shows the electrical contractor the step-bystep installation of Condustor electrical fittings with photographs.

It gives the general contractor information he needs to handle a Flexicore electrified job.

For a copy, write or phone your nearest Flexicore manufacturer, or The Flexicore Co., Inc., Dayton 1, Ohio.



Wiring drops from header duct into cell at handhole junction.



Wiring then runs either way through cell to floor outlet.



To install outlet: drill Next, install fitting in hole at outlet location. floor and fish wire.





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A.I.A.'s 100th Birthday

The big day that made the American Institute of Architects 100 years oldthe actual anniversary of its founding in New York on February 23, 1857 was scheduled to be celebrated at A.I.A. chapter events from coast to coast. In New York, at the actual site of the initial meeting in Richard Upjohn's office, a commemorative plaque was to be affixed to the building now on the spot at 111 Broadway, following a luncheon at which A.I.A. President Leon Chatelain Jr. was to be among the speakers (all this too late for coverage in this issue). At A.I.A. headquarters in Washington, planning for the Centennial Convention May 14-17 in the capital city continued, and it was announced that Dean Pietro Belluschi, dean of the School of Architecture and Planning at Massachusetts Institute of Technology. would deliver the convention's principal architectural address at the closing session. Prominent persons from many fields affecting architecture are being asked to speak on the general theme, "A New Century Beckons," and it is hoped that President Eisenhower will accept an invitation to address the convention. The photographic exhibition of 100 years of American architecture being prepared under the direction of Frederick Gutheim will open at the National Gallery of Art May 14, opening day of

the convention, and will be on view until July 15.

IAPS: A New Planning Group

A non-governmental organization for "town and country planners" of the Americas has been established as the Inter-American Planning Society, with headquarters in Puerto Rico. The Society, whose members are architecst, economists and planners in 22 countries of the Western Hemisphere, was organized at Bogota, Colombia, last November during the First Inter-American Technical Meeting on Housing and Planning, with the approval of the Inter-American Economic and Social Council, which sponsored the housing meeting, and the Pan American Union. Providing a direct method of exchanging technical information without going through government channels, IAPS has these objectives: (1) to establish a research center which will publish original studies and function as a clearing house for planning information in the Americas; (2) to maintain close contact with the Organization of the American States, the United Nations and similar institutions in the Western Hemisphere or abroad; (3) to contribute to a more efficient use of available resources in dealing with problems such as housing, urban growth and economic development; (4) to advise or give professional

assistance to public and private institutions in projects related to planning; (5) to promote the use of planning techniques in all the American republics. IAPS, whose president is Dr. Rafael Pico, Secretary of the Treasury for Puerto Rico, hopes eventually to become an affiliate of the International Federation for Housing and Town Planning.

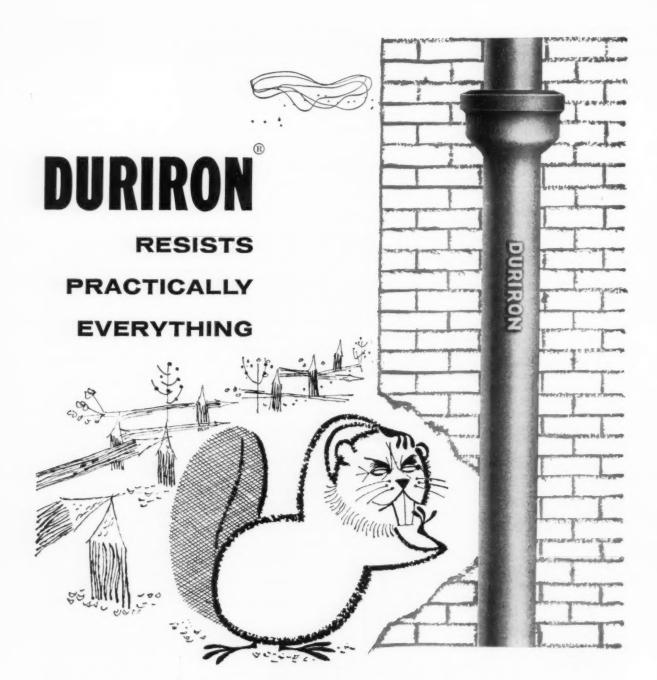
Who's Who

Five architects have been named for the first jury of the new annual \$25,000 R. S. Reynolds Memorial Award. They are: George Bain Cummings, F.A.I.A., past president of the A.I.A.; Percival Goodman, F.A.I.A., of New York; Ludwig Mies van der Rohe, F.A.I.A., Chicago, director of architecture and city planning, Illinois Institute of Technology; Edgar I. Williams, F.A.I.A., of New York; and - to represent architects of foreign countries, because the award is international - Willem Dudok of The Netherlands, 1955 recipient of the A.I.A. Gold Medal. The award of \$25,000 for "the most significant contribution to the use of aluminum in a building or project consisting of two or more buildings," which is being administered by the A.I.A. at the request of Reynolds Metals Company, the sponsor, will be presented during the Centennial convention of the A.I.A. May 14-17 in Washington. . . . Samuel Ratensky and Richard W. Snibbe are the recipients of the 1957 Arnold W. Brunner Scholarship of \$2400 administered by the New York Chapter, A.I.A., for their joint project to develop a "Critical Analysis of Large-Scale Urban Housing in the U.S.A. and in European Countries." They have also been given two additional grants of \$1200 to encourage completion of their work in one year. A second grant of \$2400 has been awarded to Caleb Hornbostel, recipient of the 1956 Brunner scholarship, to further his work "A Materials Handbook for the Architect." . . . Eugene J. Mackey, of the architectural firm of Murphy and Mackey, has been elected president of the St. Louis Chapter of the A.I.A. . . . John D. Rockefeller Jr. has been awarded the President's Medal of the Architectural League of New York. The award, made at the discretion of the president "for conspicuous service in fostering the fine arts," has been given 15 times since its establishment in 1902.



- Drawn for the RECORD by Alan Dunn

"Never mind. On thinking it over we decided to let it age -"



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HOME BUILDERS' CONCLAVE WORRIES ABOUT CREDIT AND COSTS; ARCHITECT URGED TO SUPPLY "GLAMOUR" AS SALES STIMULUS

Architects, who may be a little weary of hearing clichés about forming teams with builders and good-design-means-better-sales, were told once again at the 13th annual meeting of the National Association of Home Builders that they had a more significant part to play in helping builders offset their problems.

How many architects were around to hear was impossible to determine: overall registration of 28,000 at the 1957 edition of the home builders' big show (held January 20–24 in Chicago) again set a new attendance record; but there is no breakdown as to occupations of registrants.

The shortage of mortgage money and the rising costs of building dominated the convention's discussions, and it was not surprising to see this reflected in the panel discussion dealing with house design and architect-builder relations.

A Call for "Glamour

Herman York, Long Island architect supreme for builder houses, had a word for the added contribution he thought architects could make to increase sales in a market plagued by rising costs: it was "glamour." Keep the basic economy of design, Mr. York said, but add some "glamour."

This doesn't mean a sacrifice in the basic design, he explained, but "if a sacrifice must be made to achieve glamour, the preference must be given to eye appeal over the practical considerations."

Mr. York felt that what is needed today "in addition to mortgage money" is a sincere effort from builders and architects to spend more time on design and layout to make every house contain something new and different — "new enough to make a story but not new only to be different, and not different to a point of becoming stupid."

Architecture and Appraisal

Just how much "glamour" a new builder house may have is frequently determined by the appraiser. Frederick M. Babcock, real estate consultant and valuator who helped set up the underwriting division of FHA, offered some suggestions on how to meet objections of appraisers without losing design initiative.

Mr. Babcock admitted some lenders

and appraisers have imposed a "drag" on domestic architectural design, but felt that great strides have been made despite this fact. Lenders and appraisers are entitled to reservation, he insisted, provided it is based on actual living qualities of the house rather than on any strict set of standards, or on the fact that the design has been repeatedly accepted by buyers.

There is need for some way to measure the intrinsic difference in design, Mr. Babcock said, acknowledging that appraisals tend to be proportional to the floor area of the house, with little if any weight given to space arrangement.

Highways and City Planning

Pyke Johnson, chief consultant for the President's Advisory Committee On A Highway Program and former president of the Automotive Safety Foundation, presented home builders, architects and in fact the entire construction industry with what he called the most imposing challenge they face today.

Under the Federal aid highway act of 1956, the Government is spending \$27.7 billion to help states build the free-ways and connecting roads. The challenge, as outlined by Mr. Johnson, is that the advantageous location of all the schools, churches, water and sewerage works, shopping centers and other supporting facilities generated by this highway act remains entirely with the people in the local communities.

"Careful, coordinated, comprehensive planning can make this highway act as one of the great forces in the rehabilitation of slum areas in the central cities, and in redevelopment and expansion of the whole metropolitan area," he declared. "Never before has there existed such an opportunity to integrate landuse and transportation planning on such a large scale."

The Big Show

For those who tired of talk, there were the exhibits, among them the gigantic products display: more than a quarter of a million sq ft of exhibit space for 422 manufacturers of building materials and related equipment. Largest product grouping was heating and air conditioning, which occupied 60 exhibits out of the total 778 display spaces.

Design Merit Awards

Robert S. Strasburg, Circle Land Co., Yuma, Ariz., builder, and Jones & Urmston, Les Angeles, architect. Larwin Company, Los Angeles, builder, and Palmer & Krisel. Los Angeles, architect.

Signature Homes, Anaheim, Cal., builder, and Palmer & Krisel, Los Angeles, architect.

George D. Buccola, Anaheim, Cal., builder and Smith & Williams, Pasadena, architect.

Neighborhood Development Contest

Indian Ridge Estates, Tucson—the Lusk Corp., Tucson, builder, A. H. Rader, supervisor of Lusk's Design and Engineering Department, architect, Marum & Marum, Engineers, land planner.

Rose Tree, Upper Providence Township, Media, Pa.— Seal & Turner Inc., Media, builder; George Hay, Media, architect and land planner.

New Approach Homes, Anaheim, Cal.—Butler-Harbour Construction Co., builder, Rey Donley, Los Angeles architect; Engineering Service Corp., Los Angeles, land planner.

Crest Hoven Estates, Inc., Wyckoff, N. J.—Affred Sanzeri, Hackensack, N. J., builder; Stanley A. Leeks, Dumont, N. J., erchitect; Earle W. Bailey, Engineer, Hillsdale, N. J., land planner.

Highland North, Dalles—Fex & Jacobs, Construction
Co., builder; William Meyers, Dalles, architect; Phillips,
Proctor & Bowers, Dalles, land planner.

Parents' Magazine Seventh Annual Builders Competition for Best Homes for Families with Children

National Merit Award (houses selling from \$16,000 to \$25,000)—John C. Mackey & Associates, Palo Alto, builder; Anshon & Allen, San Francisco, architect.

Regional Merit Awards (houses selling from \$16,000 to \$25,000)—Howard C. Grubb, Tulsa, builder, and Donald H. Honn, Tulsa, architect/ (houses selling for not more than \$15,999) Cecil E. Jennings, Lubback, Tex., builder, and Donald H. Honn, Tulsa, architect.

Special Awards for Site Planning—Art Builders, Inc., Bel Air, Md., and Woodbridge-Belmont Homes Corp., Woodbridge, Va.

Household Magazine One-to-Twenty Builder Design Contest

First ("Sterling Hammer") Award—Joseph E. Carter, Jackson, Miss., builder; Edward J. Welty, Jackson, architect.

Second Prize—W. Dewey Kennell, Sarasota, Fla., builder (and designer).

Third Prize—Frank G. Snow, Grand Rapids, Mich., builder; John W. Cooper, architect. Fourth Prize—J. T. Comin, Laramie, Wyo., builder;

Fourth Prize-J. T. Comin, Laramie, Wyo., builder, Hitchcock and Hitchcock, orchitect.

There were also the "how to do it" clinics, the demonstrations and the usual frenzied social round.

The money crisis provoked the Association into calling the credit situation, in its policy statement, "fundamentally wrong" and a threat to the industry's 25 years of progress. It recommended raising interest rates of VA home loans and expanding secondary lending activities of FNMA, and, as a long-range solution, a central mortgage facility.

The convention elected George S. Goodyear, Charlotte, N. C., president; Nels Severin, San Diego, Calif., first vice president; Carl T. Mitnick, Merchantville, N. J., second vice president; Martin L. Bartling, Jr., Knoxville, Tenn., treasurer; and John Bauer, Indianapolis, Ind., secretary.

(More news on page 28)





Drive Thru Markets get double-duty, too, with Corrulux canopies to protect their "stay-in-the-car" customers while transmitting flattering light to all food display racks.... Designed by W. G. Horn, Mecca Engineering Company.

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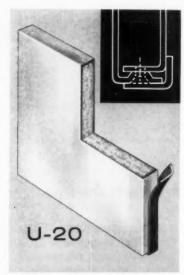
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MECHANICALLY-FASTENED

PORCELAIN ENAMEL PANELS



This unretouched photo clearly illustrates adherence failure in a <u>laminated</u> panel of other manufacture recently removed from a major building project.





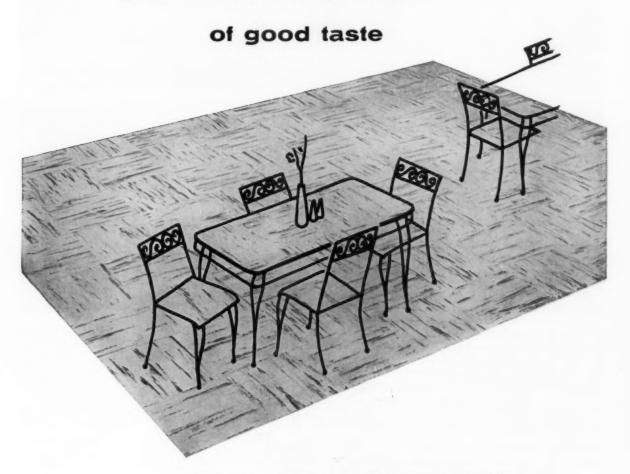
ERIE porcelain enamel panels are designed for positive, permanent assembly through the use of mechanical fasteners—not adhesives! The U-20, for instance, is composed of two nested pans, insulated with preformed Fiberglas and secured with corrosion-resistant screws applied through the flanges of both pans. Bosses at all assembly holes (see detail) minimize metal-to-metal contact to limit thermal transfer and all panel edges are sealed with pressure-sensitive vinyl tape to control moisture access.

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Pattern shown: Wintergreen



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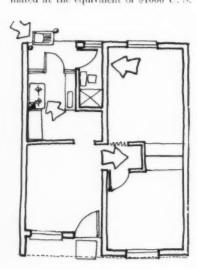
HOUSE BUILT ON RESEARCH: BOGOTA TRAINING PROJECT

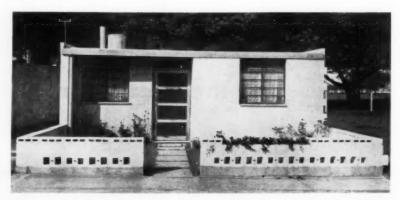
One of four student projects during last year's course at the Inter-American Housing Center at Bogota (see pages 193-200) produced the low-cost modular concrete house shown here as an example of training projects at the Center.

The project was conducted by Prof. René Eyheralde, a Chilean, and ten Latin American nationalities were represented among the eleven "students" all, as required at the Center, professionals in the field of housing.

The "developmental design" method used for the design and construction of this house is a hallmark of the Center and "appears to work very well," according to the Center's new director, Eric Carlson. The method consists first in studying in isolation the various problems implied in a design program and making use of mockups which permit a full comprehension in three dimensions of the proposed solutions; then, after a "coordination period." all the separate solutions are assembled in a specimen building from which final, "proved" plans and details are prepared.

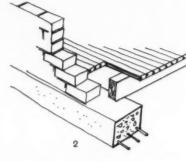
Concrete blocks of the common type readily available in Bogota were used as supporting walls and partitions, and determined the module for the entire house. Prestressed concrete beams were used for both foundation (see sections) and roof structure - the roof has inverted "T" sections supporting common blocks of slag, with a screed of concrete poured over to provide the minimum fall needed for rain water drainage. Kitchen, bath and laundry facilities are of the type traditional in the country. Cost was estimated at the equivalent of \$1000 U.S.



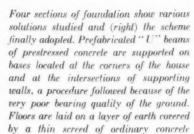


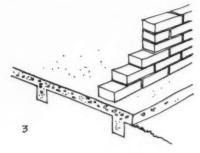


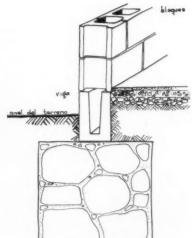












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CONSTRUCTION INDUSTRY CATALYST: BUILDING RESEARCH INSTITUTE GROWS UP IN A BIG JOB

A way of providing the U.S. construction industry with some of the benefits of composite research through private rather than public initiative may be evolving from the increasingly effective activities of the Building Research Institute. Less than six years old, BRI has in the last year or so found some working interpretations of its function "support of BRAB" - which make it begin to seem a really significant expression of its parent organization's stated objective: "to promote the trial, acceptance and use of the results of research." Further, although this concept precludes either budget or facilities to conduct its own research, BRI has managed to stimulate industry activity which comes close to just that. The "workshop" conferences, for example, on such subjects as plastics in building and metal curtain walls, have provided a never-before kind of context for architects, engineers, contractors and materials producers to get down to brass tacks in joint discussion of common problems they usually confront only separately; define areas needing further study; and produce the people who can usefully get together to pursue such study. Study groups, which hold periodic meetings to follow up on problems thus defined, are another technique which has been developed by BRI in the last couple of years; and round tables which bring together selected brains to cope with a particular aspect of some problem isolated by the study groups are still another. In a different area, but still adding up to focusing of expert industry knowledge on specific areas of needed information, are the advisory groups BRI has assembled to execute the current series of BRAB contracts with the Federal Housing Administration on problems FHA feels need study for informed revision of its Minimum Property Requirements.

The question remains whether BRAB's BRI can through its conferences, workshops, study groups and round tables achieve actual coordination and stimulation of building industry research - not just of its findings - the lack of which is felt by many, particularly in the design professions, to be holding U.S. construction to a rate of progress far below its real potential.

Evolution of BRI's current status as a sort of catalyst for building research has been gradual and perhaps at least partly - like so many good ideas accidental. BRAB itself - the "Building Research Advisory Board" -- was organized in 1949 within the Division of Engineering and Industrial Research of the National Research Council of the National Academy of Sciences. Objectives were outlined simply as the correlation and stimulation of building research. It was made clear at the outset that BRAB would not engage in any actual research, merely guiding and correlating the research done in the building field. BRI was started in 1951 "for the support of BRAB," to help maintain liaison with the fast-growing building industry and to provide a practical channel for mobilizing dues-paying industry support on a large scale without losing the benefits of the objectivity BRAB could maintain as an appointive body. Today BRI has expanded from 33 organizations and 40 individuals at founding to 310 organizations and more than 1000 individual members. Nineteen new members with 32 individuals affiliated in January 1957 alone.

Although both have their headquarters in Washington, neither BRAB nor BRI has any direct connection with the Federal government, although many people seem to assume they do. Perhaps the erroneous belief that they are "government" arose from the fact that the parent of them both - the National Academy of Sciences - was chartered by the Congress during Abraham Lincoln's Administration. The charter, however, merely sanctioned a scientific body to which the government could turn for scientific advice; it did not put the Academy under the government's wing, but left it privately endowed and with a substantial income from contracts negotiated with the government.

In the United States the Federal government depends for its technical research on such sponsored agencies as the National Bureau of Standards, the U. S. Forest Products Laboratory and a handful of other agencies scattered through the Executive Branch, and on projects done under contracts with

universities and industry sources. By contrast, foreign governments have established research laboratories as part of their systems, receiving advice on current and new research as well as results from them.

Most closely identified with both BRAB and BRI is William H. Scheick, the executive director, a 52-year-old former professor of architecture who has developed their programs from scratch. He came to Washington in 1949 with the inception of BRAB from directorship of the Small Homes Council at the University of Illinois. Mr. Scheick is a graduate of Carnegie Institute of Technology, a registered architect and a member of the American Institute of Architects.

The extent of BRI's influence on the building industry is, of course, difficult to measure precisely. Its purposes and activities can touch just about everything and everybody in any way identified with building and buildings through the long cycle from site planning and layout to maintenance of the finished structure. Its interests embrace all materials, assemblies, design, physiological and psychological aspects of usage.

One estimate of the impact was to be found in these recent comments in Nation's Business, monthly magazine of the U.S. Chamber of Commerce:

"Better buildings for the money will certainly be the end result of the work of the Building Research Institute.

"BRI conferences have generated high interest among the 3800 researchminded building materials and equipment manufacturers and distributors, design professionals, and the mortgage finance and real estate people who have attended the past 12 sessions.

"Cooperation in producing a science of building is emerging from these wellconceived forums.

"Competition to produce acceptable pieces of buildings is heightened as examination of possible technological changes takes place.

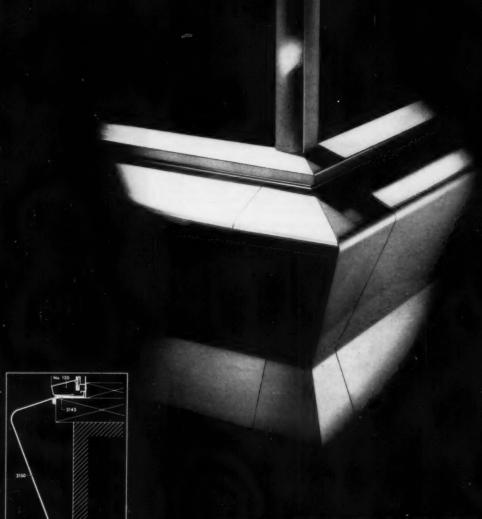
"Retraining of construction mechanics will be needed in some trades as new building components require new methods of application.

"Final product: better housing, better places to work, at less cost. All the result of technological research in building." (Bibliography of publications on page 360)

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"CERAMIC TILE...FOR PERMANENT COLOR CLARITY, DURABILITY AND MINIMUM MAINTENANCE"

BELLUSCHI AND SKIDMORE, OWINGS & MERRILL

Belluschi and Skidmore, Owings & Merrill bypassed the institutional look . . . made ceramic tile color a therapeutic factor in this refreshing hospital entrance design . . . and guaranteed long life and low maintenance with well-considered ceramic tile specifications.

Tile's unique beauty, design flexibility and durability were all fully recognized. Imaginative use of standard tile units achieved an air of relaxation, efficiency and rigid cleanliness. Beauty is only the eye-catching part of the story. Consider the design from a hospital trustee "cost-accounting" viewpoint.

There's a tile floor to fight foot traffic for years with minimum wear and maintenance. The glazed tile wall at the right will gleam brightly on generations of patients. Take the inside-outside penetrating wall in the center—vivid proof of how tile's "fired-fast colors can take extreme exposures. Note the smaller tiles facing the front of the reception desk. These fireproof surfaces will never need waxing, costly maintenance or replace-

If you demand beauty, durability, long-range economy or design flexibility, you will find that ceramic tile provides them all. Your local tile contractor will give the details on the wide range of colors, textures and sizes. Specify ceramic tile on your next residential, institutional or commercial building. Both you and your client will be glad you did.

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ON THE HORIZON: MORE OFFICE BUILDINGS FOR BOOMING ONTARIO



44--- El---

TALL ONES FOR TORONTO — Two major office buildings in fast growing Toronto are projects of Anglo Canada Fire and General Insurance Company (left) and Canadawide Investments Ltd. (at right). Prof. James A. Murray of the University of Toronto School of Architecture is architect for the Anglo Canada building. The Canadawide Investments building will be the first in Toronto to incorporate multi-story parking facilities; it will have a five-story parking section. Cost is estimated at \$2.5 million. Peter Caspari is the architect





MUNICIPAL CAMPUS — The complex of buildings designed by architects



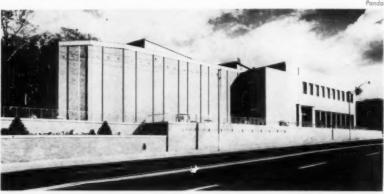
Shore and Moffat for Etobicoke Township, Ont., will consolidate the municipal

and Board of Education offices. Estimated cost: \$1,750,000. Closeup: Council hall

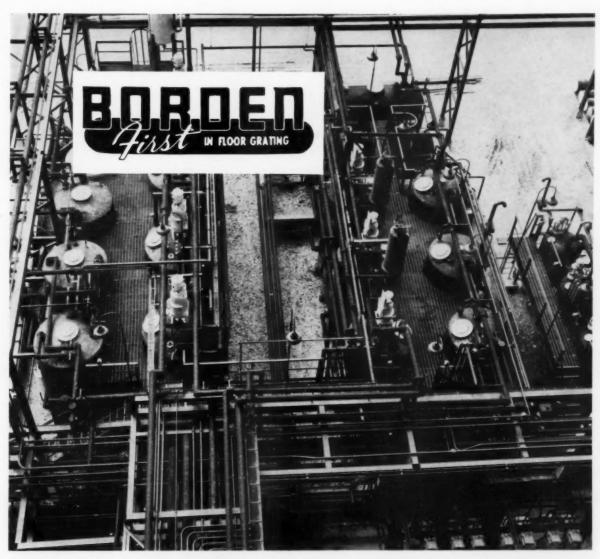


MUNICIPAL SPLIT-LEVEL — The new headquarters building for King Township's Council and municipal staff will have brick and marble exterior walls on a steel frame, utilizes split-level plan to get maximum space in a long, low building. Architect is Irving D. Boigon

OFFICE ADJUNCT — Confederation Life Association of Toronto has always preferred to provide staff facilities for eating, recreation, etc., in a building quite separate from its offices, and last year opened this new "Staff House" in Toronto. With the separation of facilities, not only are business and pleasure not mixed, but the staff is inlended to benefit from the change of pace afforded by the move to other scenes for lunch-time and after-hours activities. Architects were Marani and Morris



(Continued on page 40)



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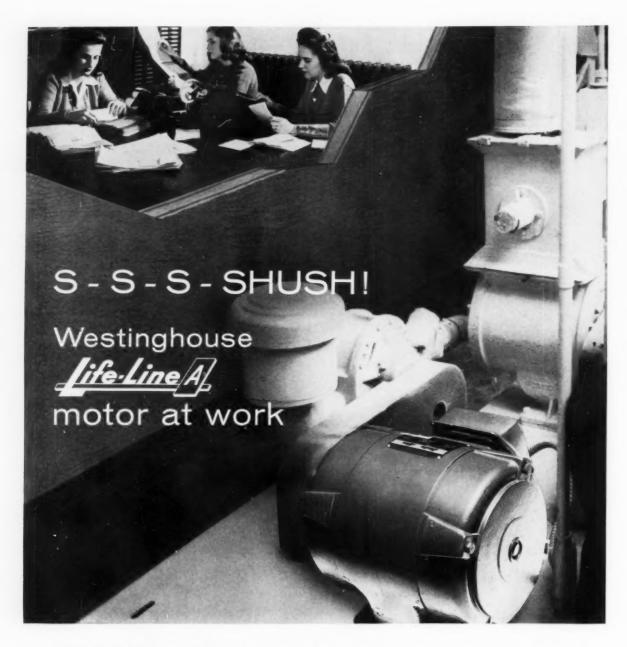
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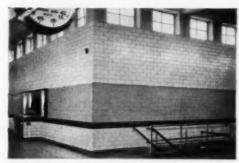
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THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 36)

MORE BUILDING IN 1957, C.C.A. CONVENTION TOLD

Construction in 1957 will increase by about \$1 billion, or 12.5 per cent, over the 1956 valuation total, Prime Minister Louis St. Laurent told the 39th annual meeting of the Canadian Construction Association in Toronto January 19–23, and by seven per cent in physical volume. At the same time, Mr. St. Laurent noted that a housing decline is to be expected. His remarks coincided with an Ottawa announcement that the Federal government was raising the interest rate on National Housing Act insured mortgages from five and a half to six per cent, in an effort to attract more investment funds.

The Prime Minister told the 1000 C.C.A. delegates, their wives and guests that money and materials will become harder to get as the year progresses.

But ultimately, he said, Canada's "abnormally intense" activity will subside to the average level of the past five years.

During 1957, capital investment is expected to rise to a new high of \$8.7 billion despite the fact that during the past year "the huge scale of Canada's capital expenditures has tended to outrun the supply of savings available to finance them," Mr. St. Laurent said. The result will be a shortage of mortgage money for housing because banks will be occupied with providing loans to commerce and industry, he observed. "It now appears," he said, "that substantial numbers of the many who were employed in building houses and supplying materials for them last year will have to be diverted this year to work on other types of construction or other employment.

"On the other hand," he added, "I would like to express the expectation that over the longer period, as distinct (Continued on page 44)

Ronald F Vickers



Newly elected first vice president, H. J. Ball of Kitchener, Ont., and T. N. Carter of Toronto, president, of the Canadian Construction Association, with retiring president A. Turner Bone of Montreal. Below: R.A.I.C. President Douglas E. Kertland, Toronto; Harvey G. Pipher of Rosco Metal and Roofing Products Ltd.; Mr. Bone; and E.C.S. Cox, for Ontario architects





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So much depends on effective communication that Electro-Voice engineers—the men who developed the E-V Compound Diffraction projector—have prepared this compact, 24-page handbook to guide you in selecting, placing, operating and maintaining P. A. equipment. In it, you'll find the answers to questions like these:

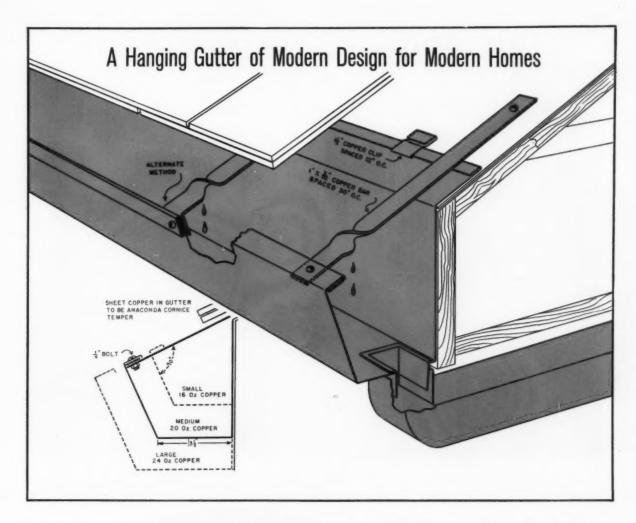
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You'll find answers to these and virtually all other communications questions in THE CDP HANDBOOK. Write today for Bulletin 195.

Electro-Voice CDP units consist of two coaxially-mounted diffraction horns working from opposite sides of a single diaphragm over a 120° polar pattern. You get 2½ more octaves of sound reproduction than in conventional horns. To reach more people more clearly, specify CDP.

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Here's one way to make a hanging gutter match the clean, simple lines of modern house design

Contemporary house design calls for a new kind of hanging gutter. The drawing shows a copper gutter which can be easily formed on regular sheet metal shop equipment and has the straight lines and plain surfaces most suited to today's style of house design.

The gutter, being copper, can be set dead level and is installed tightly against the building or overhanging cornice. It is formed so that the apron has the same pitch as the roof and so that the outer edge is in line with the roof slope. If painted, it will appear to be an integral part of the house construction.

Note that two ways are suggested for forming the outer edge and reinforcing it with a copper bar. The gutter is supported by copper clips at the apron edge, and the outer edge of the gutter is held in line by copper bars; each bar is fastened to the roof at only one point. This method allows the gutter to move freely longitudinally during expansion and contraction of the metal. The inset detail shows copper sheet thickness recommended for three common sizes.

Copies of this drawing with suggested specifications are available on request. Ask for Modern Gutter Detail.

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in this contemporary interior...



Neutrality of walls, doors, floors and ceiling is preserved by unobtrusive uniform hanging for all doors in the extensive executive suite of the Natural Gas Pipeline Company of America. — Naess & Murphy, architects and engineers, Chicago

which doors have RIXSON closers?

Entrance door, left, has Rixson no. 20 concealed floor type closer. Communicating office door, right, is equipped with a Rixson Uni-check concealed floor type closer. Inactive wardrobe doors, center, have no closers; but are hung on Rixson no. 117 offset pivot sets. All doors have identical hanging style, achieving a pleasing simplicity.

No exposed mechanisms or unsightly arms mar the appearance of these beautiful modern doorways, even when doors are open. Extra-length spindles are provided to clear thick rug installations.

Matched hanging styles can also be achieved with Rixson center hung installations.

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Weldwood walnut paneling in President's office, First National Bank of Phoenix, Phoenix, Arizona. Architect: William D. Reed; Installation: Adelta Showcase & Fixture Mfg. Co.

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Achieve it beautifully with wood paneling by Weldwood

Achieve it easily too. Weldwood paneling is simple to install...and the cost is moderate. A Weldwood Architect's Service Representative will help you choose from our large collection of selected woods.

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Weldwood offers a wide choice of interesting woods, from "standards" like walnut, mahogany, oak and cherry, to exotic and imported species like Brazilian rosewood, teak and Korina®.

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Contact your Weldwood Architect's Service Representative when you start planning your next job. There is no obligation. You can see a full selection of Weldwood paneling at any of our 87 branch offices in major cities. In New York, at Weldwood Building, 55 W. 44th St., and at Architects Sample Corp. In Canada: Weldwood Plywood, Ltd.



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THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 40)

from the next few months, there will be a good supply of funds available for housing."

Earlier, A. Turner Bone of Montreal, C.C.A. president, had expressed the belief that a 1957 construction volume increase of five to ten per cent is likely, though he also expected a housing drop.

ENGINEERS SET UP PLAN TO QUALIFY TECHNICIANS

A plan to establish standards of qualification for engineering technicians and to set up a system of voluntary registration for them was approved by the 15,000-member Association of Professional Engineers of Ontario at its annual meeting in Toronto January 26.

Technicians are to be examined by the Association and classified in four grades, determined by their educational qualifications and technical experience. In time it is expected that many may qualify as full-fledged members.

New president of the Association, largest body of professional engineers in Canada, is John Holloway Fox, O.B.E., of Toronto. With him on the executive council will be the immediate past president, Merritt W. Hotchkin of Kirkland Lake; Charles T. Carson of Walkerville, first vice president; and Walter J. Gilson of Toronto.

Two councillors were also elected to represent each of the five engineering branches: (civil) J. H. Irvine, Ottawa, and A. W. F. McQueen, Niagara Falls; (electrical) G. M. McHenry, London, and J. W. Holmes, Peterborough; (mechanical, aeronautical and industrial) P. E. Cavanagh, Toronto, and Edmund P. Lewis, Sarnia; (chemical and metallurgical) L. C. Sentance, Hamilton, and H. D. Culham, Toronto; (mining) C. P. Jenney, Toronto, and M. L. Urquhart, Schumacher.

The Association's permanent officers are T. M. Medland, executive director, J. M. Muir, secretary-treasurer and registrar, T. C. Keefer, field secretary, and B. H. Goodings, field representative, all of Toronto.

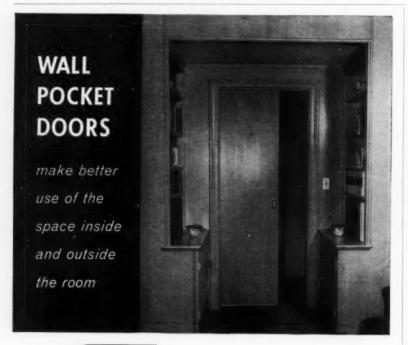
NEWS NOTES

The Royal Architectural Institute of Canada has announced that no Massey Medals Competition will be held in 1957. . . . A \$1250 architectural competition for a community art gallery has been announced by Graham Bell Ltd. of Streetsville, Ont.; object is to encourage greater

(Continued on page 46)



Architectural Institute of British Columbia's new officers — (standing) Prof. Fred Lasserre, U.B.C. architecture head, and government representative on the Council; C. E. Pratt and Kenneth McKinley, also Council members. (Sealed) Robert W. Siddall, Council member; Clive D. Campbell, president; John L. Davies, past president and Council member-at-large





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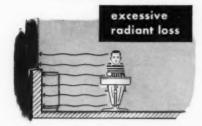
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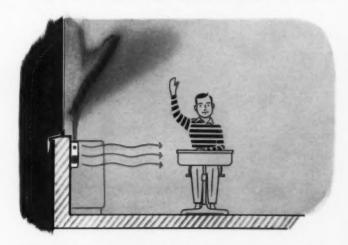
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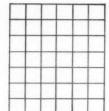
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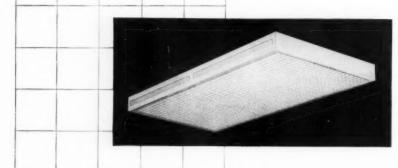
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THE RECORD REPORTS

NEWS FROM CANADA

(Continued from page 44)

use of porcelain enamel, decoratively and/or as a basic structural element. Details from: Professional Adviser Prof. James A. Murray, Editor, The Canadian Architect, P. O. Box 4000, Terminal A. Toronto 1, Ont. . . . Canadian Housing Design Council Awards for merchant builders' houses will be made in Ottawa on April 3, by Governor General Massey. . . . Architects in the News: F. W. Nichols of Victoria appeared on the program of the National House Builders Association Jan. 9-11 get-together in Montreal. Prof. Raymond T. Affleck of Montreal, Mayor John Pratt of Dorval, Que., S. A. Gitterman of Ottawa and Prof. S. R. Kent of the University of Toronto were on the program of the National Concrete Products Association convention in the same city. . . . Incorporation of the Newfoundland Association of Architects has been announced. . . . A talk by architect Richard Neutra of Los Angeles, "Future Architecture - A Most Human Affair," climaxed Session '57, sponsored at the Banff School of Fine Arts by the Alberta Association of Architects. Two newcomers to the conference - inaugurated last year as "Session '56" - were George A. Lundberg, sociologist, and Norbett L. Mintz, psychologist and anthropologist. Professor Lundberg, head of the Sociology Department of the University of Washington, discussed the social implications of architecture, and Mr. Mintz, a member of the faculty of Brandeis University, Waltham, Mass., discussed the results of experiments into the "Effects of Esthetic Surroundings."

Contracts Awarded: Comparative Figures'



*Compiled by the Editor and staff of The Building Reports,

(More news on page 48)



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SCHOOL MESSAGE PROPOSES FOUR-YEAR \$2 BILLION AID

Congress late in January received the President's special message asking for quick action on legislation to provide Federal aid to the states and local school districts for construction of new schools, and outlining a \$2 billion program "to accomplish in four years what last year's proposal would have done in five, since one year has already been lost."

The message generated anew all the old arguments over Federal intervention in the state construction program and probably provided Congress with its first major legislative consideration of the new session. It was couched in terms of greater urgency than previous White House messages on the same subject because, as the President was at pains to point out, a full year had been lost in the effort to catch up with the demands for

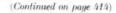
school housing. The final session of the 84th Congress failed to act on legislation after the House adopted the Powell segregation amendment to the school construction bill, then defeated the entire measure. The Senate did not act on the matter at all after that time.

The 1957 program proposes four kinds of aid:

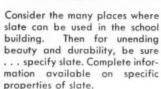
 Grants to states at the rate of \$325 million annually for four years, adding up to \$1.3 billion. The money would go to assist in construction of public schools in financially needy districts. Allotment would be by number of schoolage children and state income per child. The Federal money would be matched by the neediest states and doubled by the least needy - in the first year from state or local sources, or both, and thereafter from state sources alone. The combined Federal-state funds would go to needy local districts with priority given to projects that would relieve half-day sessions, overcrowding, and other major deficiencies. This phase of the program is designed to increase incentive for states to support school construction. It is also the one on which the partisan battle is likely to turn (quite aside from questions of segregation or religious controversy which may be raised). The Democrats are generally for a straight 50-50 matching of Federal funds and allocation of funds strictly on the basis of school-age population.

2. Authorization over the four years of \$750 million for Federal purchase of all or part of an issue of bonds which local districts seek unsuccessfully to market at reasonable interest rates. School-age population would govern distribution of these funds and state agencies would determine priority of local districts based on relative need. Bonds would be purchased at the rates of longterm U. S. Treasury obligations plus one half of one per cent.

3. Federal advances to assist states to support bonds issued by state schoolfinancing agencies for construction purposes. This applies the so-called leasepurchase plan, which has been tried for Federal construction, to school housing. Any state so choosing would set up an agency coordinated with the state education department and empowered to issue bonds. The state agency would use proceeds to finance construction of schools and local districts in turn would rent or lease the facilities. After a given period the schools would become the









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ARCHITECTURAL RECORD

WESTERN SECTION

Western Editor:

ELISABETH KENDALL THOMPSON

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TO US THE TORCH

A LITTLE OLD LADY died in San Francisco last month, and only a few people in California knew who she was. Outside California even fewer knew her. Yet she was one of the great people of Western architecture.

Her name was Julia Morgan and she was one of that group of architects in the San Francisco Bay area who, around the turn of the century, contributed so lastingly to the tradition of vitality which has been the foundation of the region's architecture, especially in the residential field. With the exception of Maybeck's, the names of the others — Howard, Mullgardt, Polk, Coxhead — are as little known as Julia Morgan's. They were the pioneers, as much the breakers with tradition as the makers of it.

Julia Morgan, the only native Westerner of these early-day architects, was also the only practicing woman architect among them. She was the first woman to receive a degree in engineering from the University of California, and the first woman to graduate from the Ecole des Beaux Arts in Paris. She might have been remarkable for the simple fact of having been the rare combination of woman and architect but she was more than that, and her work, not only in its sizable volume but in its particular quality, is testimonial to that.

The several hundred houses which she designed, freely interpreting and mingling historic and brown shingle detail in a sympathetic harmony more refined if less bold than Maybeck's touch, will probably be her silent and most enduring claim to a place in the continuing stream of development of a Bay Area architecture. But she was also the architect for more imposing structures: the multistory Women's City Clubs in San Francisco and Berkeley, the Honolulu Y.W.C.A. and the Chinese Y.W.C.A. in San Francisco, and, with Bernard Maybeck, the University of California's Campanile and Women's Gymnasium. Her most famous commission was, however, that of architect for San Simeon, William Randolph Hearst's fabulous estate on the California coast.

By all standards she was a successful architect and in the San Francisco area she was well known. But she shared with the other architects of her day a reluctance to publicity and none of her buildings was ever published. For all her reserve she was not without strength, conviction and spirit. She could not have been otherwise and still be successful as an architect. Yet she never assumed the mannish manners sometimes thought essential in a man's world. For women who want to be architects, she suggests an excellent model. What she was and what she did were known to her family and her friends, or to those who, seeing her charming houses along the Bay Area's hillside streets, inquired of the owners the name of the architect. By her works she was, in fact, known.

By our works we, too, will be known. Let us not forget, whatever may be our special job in architecture, that although we are the inheritors of yesterday, we are the bequeathers to tomorrow. Let us bequeath buildings and ideas which clearly stand for bold minds and free spirits, even as we have received these from our predecessors.

E. K.T.

"NO LITTLE PLANS" FOR THE WEST'S FUTURE

This month the American Society of Planning Officials is holding its annual national planning conference in San Francisco. Convention-goers passing through the West can see some of the planning problems engendered by the region's tremendous growth, but they cannot see the plans just announced for development of some of the West's urban centers. Tollways, freeways, rapid transit, are the dynamic aspects of planning; their influence on the pattern of cities is difficult to assay because the need for them is so great. But their effect promises little of beauty and the chance for leisurely enjoyment of the cityscape. It is refreshing, therefore, to take a look at some of the projects which offer promise of pedestrian comfort in open. downtown areas.

CIVIC CENTERS: In the last five years a good many Western cities large and small have taken a long look at the future and decided that the end results from master planning for tomorrow are well worth the cost of planning today. Small communities like Eugene, Oregon, larger ones like Lakewood, California, and metropolises like Seattle, Washington, have embarked on development of long-range centers for their public buildings. Los Angeles, the West's largest city, has had a civic center master plan for many years whose forethought contrasts directly with the unplanned growth of the surrounding areas and its many communities.

Eugene, a city of some 35,000 population, two years ago accepted and approved a master plan for a civic center development which had been formulated for it by the city's architects, working as a volunteer group. Now the first building in the center is to get under way this spring when construction starts on the county court house. Controversy as to whether or not to locate it in the civic center stalled its progress for a while last year, and the question was put to the residents. They voted overwhelmingly to locate it according to the master plan.

Last November Seattle citizens also voted on a civic center problem, and decided enthusiastically to issue over \$8,000,000 in bonds for additional land and for design and construction of the civic center, often talked of but never realized. A committee, headed by civic leader Harold Shefelman, is working with architects and planners on requirements for the center, and will select an architect in the near future.

CAPITOL MALLS: While plans for development of a mall running from California's capitol building in Sacramento down to the edge of the Sacramento River have been known for some time, the fact that a mall was to be developed in front of Oregon's capitol building at Salem was little known outside Oregon. For the last

year and a half, the Capitol Planning Commission has been considering ways of selecting an architect for the design of the mall. The 1955 Legislature had allocated \$50,000 to provide professional architectural and landscape architectural services for making a master plan of the capitol area.

Early this year the state's Board of Control announced that it had selected Wilmsen and Endicott, Eugene architects, to work with Francis Keally, New York architect who won the competition for design of the capitol building which was completed in 1939, Herman Brookman, Portland architect, and Lloyd Bond, Eugene landscape architect.

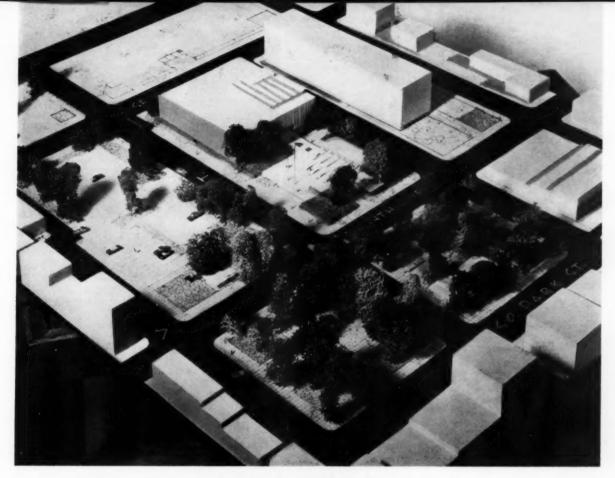
The state has been acquiring property in front of the capitol building for some time, with a view to providing a proper setting for the capitol and to locating the new buildings long needed for state offices.

URBAN RENEWAL: Two projects for rehabilitation of decaying areas were announced at the start of this year, one for Denver, the other for San Francisco. Both involve sizeable areas, but Denver's plan envisions a long-range development over many years of a large section of the downtown area. San Francisco's could be realized more rapidly since it encompasses a smaller area — the city's run-down, crowded produce district which borders on lower Market Street and the Embarcadero.

Tentative plans for the "Golden Gateway" project are underway, with approval expected late this spring. After last fall's debacle in regard to plans for a park in front of the Ferry Building and the victory of the straight freeway, the unanimous enthusiasm in support of the Gateway proposal indicates that realization of the proposal may actually come within the presently estimated eight years. The city's administration has rejected any piecemeal acceptance of the plan, and wants all of it.

Architects for the preliminary planning of the "Golden Gateway" are Skidmore, Owings and Merrill. Present plans are to provide a park-like "public area" which would run from a Ferry Building park at the foot of Market Street to another park between Clay and Washington Streets. Office buildings and garages would be built in the blocks near Market Street. Apartments would be located in a large section opening onto the Embarcadero and the Clay-Washington park. Light industry, already located on the north side of the proposed renewal area, would remain.

Denver's master plan for an eight-square-mile area of its downtown district is a long range one, intended for execution over a 20-year period. Based on the as yet untried but already classic concept of an outer loop artery for through traffic and an inner loop around (but



County court house (square building, top center) in Eugene, Ore., is first unit in new civic center for which a master plan was prepared by volunteer group of architects. Adopted by city council as "direction" for future, detailed planning will come later. Wilmsen and Endicott are architects for court house and meeting house immediately in front

not through) the downtown district as a means of freeing the inner business core for super blocks and pedestrian walkways, the plan zones sections of the district for business, public and semi-public offices, retail stores, convention hotels, and apartment and office buildings. Details of the proposed plan were worked out by planning department staff members, Denver landscape architects and planners, and 10 Colorado architectural firms each of which provided sketches of one aspect of the plan: Stanley Morse, Victor Hornbein, Smith & Hegner, Eugene Sternberg, Toll and Milan, James Sudler, W. C. Muchow, Max Saul, Fisher, Fisher & Davis, all of Denver, and Tician Papachristou of Boulder.

THE METROPOLITAN WEST: Big City Building News

SAN FRANCISCO

If Not South Basin, Where?

Hopes of relocating San Francisco's wholesale produce district in the former war housing tract known as South Basin died in the first days of the new year because, said the city's mayor, "a few members of the industry blocked the move." But, he continued, the end of this plan — urged by city and business officials, did not signal the end of the city's intent to redevelop the present produce district, located in the heart of downtown San Francisco.

The Associated Fruit and Produce Dealers, however, said that its members had always taken the stand that they "would not hinder the redevelopment of the produce area" but that they "cannot move until compensated for their present buildings."

Just where the city might next look for a site was not clear. The South Basin site had been held open for possible city purchase by FPHA; with the deadline past, the land and the abandoned shacks on it must be put up for sale. Rumors that the dealers' association had bought some 25 acres near the San Francisco-San Mateo county line were unconfirmed

The present produce district has repeatedly been warned by health officials on its unsanitary condition. With the congestion of trucks, produce and people, especially during the morning, it has been the despair of planners and traffic experts. To find a solution to the problems it makes for the busy downtown business district, a citizens' group including civic leader J. D. Zellerback (Confirmation)

WESTERN BUILDINGS



Montana State College's new fieldhouse is covered by a dome which has a clear span of 300 ft and is said to be the longest such span in a timber structure so far built. Columns on building perimeter support dome which rises to center height of 92 ft Seating capacity for basketball is 12,500; for arena sports, 15,000. Cost per sq ft was \$11.10. Erection time for dome was 10 weeks. Oswald Berg, Jr., and the late Fred Willson were architects; Ben F. Hurlbutt was structural engineer



San Francisco: Hotel and Office Building

A \$10,000,000 hotel and office building to be built on Van Ness Avenue will have 400 hotel rooms in a six story wing with garden court and heated swimming pool, and a nine story office building wing. An underground garage will park 600 cars. Construction is to start by fall with completion scheduled for early 1959. Thomas Price, Galveston hotel specialist, and Hertzka and Knowles, San Francisco, are architects; Thomas Church is landscape architect

Scottsdale: Arizona: Lift-slab Hotel Structure

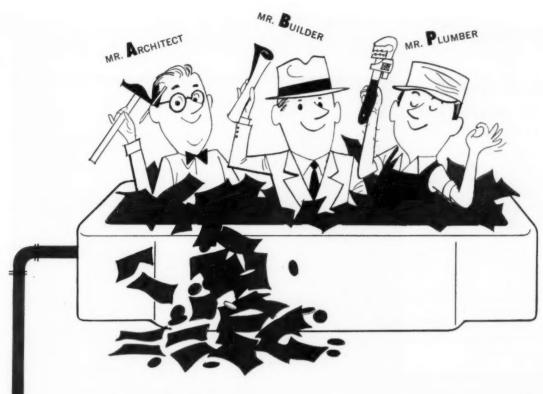
Fabulous Scottsdale's first big resort hotel will be the Valley Ho, now under construction. Hotel tower is seven stories high; suites with enclosed patios surround pools. Construction was by lift-slab method. Edward L. Varney & Associates, Architects and Engineers





Los Angeles: Break-Through on Height

Immediately after repeal of Los Angeles' ordinance against buildings higher than 12 stories, plans for this 25-story office building and parking garage were announced by McKee & Co. and Heitschmidt and Thompson, their architects. Six levels will be for parking, rest of building for office space



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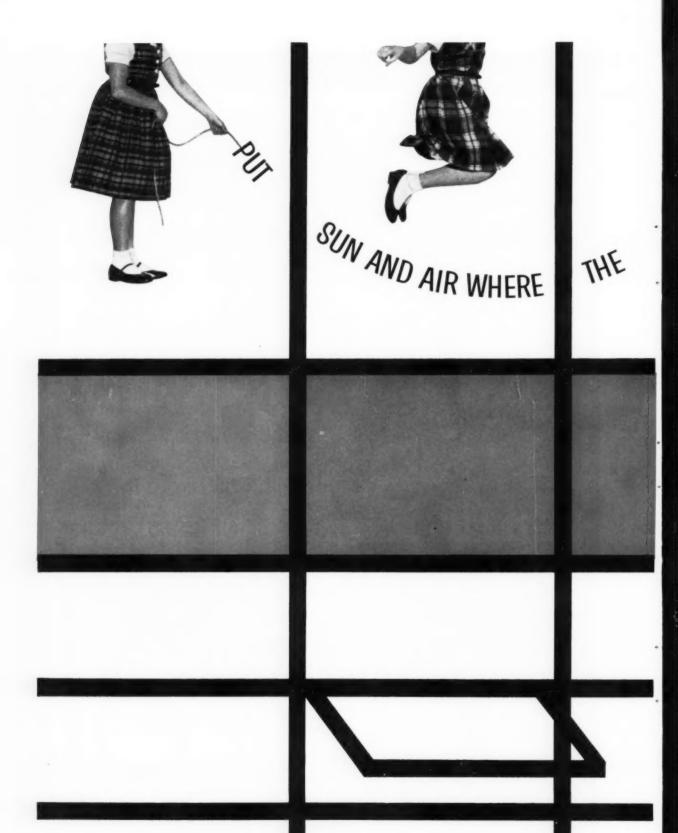
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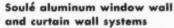
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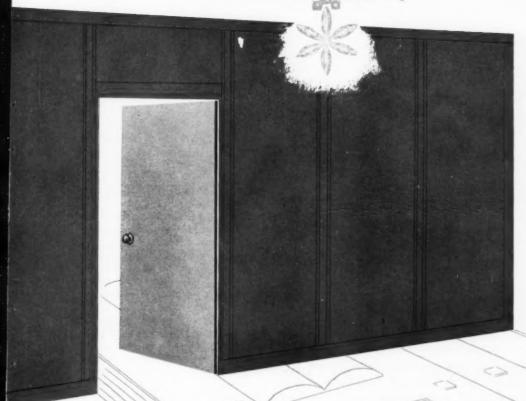
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SCIENCE AIDS THE BUILDING FIELD

Product

Termites and powder-post beetles, two of the most destructive insects in the field of wood construction, can be completely eliminated by exposure to infrared radiation, according to an entomologist at the University of California at Los Angeles. Even in the larval stage the radiation is lethal, Roy J. Pence learned in a series of field tests on a simple unit which he designed.

The unit consists of a small cabinet of wood in which is mounted a battery of six infrared lamps.

Treatment of an infected area consists of placing the box on the floor or near posts for a brief period — five to ten minutes, depending on the thickness of the affected wood. Lateral transfer of heat from the unit causes unsuspected insects to come to the surface and be killed by the radiation, Pence found.

Although termites are by far the best known of the wood-destroying insects and research against their damage as well as protection from their destructive effects has been extensive, powder-post beetles are a source of equal and perhaps more expensive destruction, since they have a predilection for hardwood flooring and posts.

Methods

An anechoic chamber at the Engineering Design Division, University of California, is to be used for studies in the directional characteristics (amounts as well as paths) of noise—from loud speakers, air hoses, electric motors. Wall, ceiling and floor of the chamber are studded with 3000 evenly spaced, equal-length wedges of fiber-glass. A grill work anchored at the walls and raised above the floor permits researchers to enter the room without damage to the wedge. The nearly-sound-proof chamber permits no reflection of sound so that noises in it are scarcely heard.

Settlement of TEST PILINGS in clay soils can be predicted by a time and money saving method devised by a civil engineering professor at the University of California. Prof. H. Belton Seed uses a four-vaned rod, pushed into the soil at various depths before piles are driven. The amount of torque required to rotate the vanes in the soil makes possible the determination of the amount of settling the pile would undergo under a specific load in that soil.

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ARCHITECTURAL METAL LETTERS

THE METROPOLITAN WEST

(Continued from page 48-3)

(the newly-appointed Italian ambassador), financier Charles Blyth and 11 other businessmen, gave the city\$45,000. With this money, Skidmore, Owings and Merrill's San Francisco office was commissioned to make a plan for the district redevelopment with office and apartment buildings replacing the old and rundown structures now in use by the produce dealers.

OREGON

Today's Machine

vs Yesterday's Hand

As the great concrete structure for The Dalles dam rises on the Columbia River between Oregon and Washington, time is running out for archaeologists working to preserve as much as they can of the petroglyphs — drawings on rocks — which were made on the canyon walls by Indians in some dim, long ago period. When The Dalles dam is complete, the waters of the Columbia will have flooded the area where the petroglyphs are located and they will be lost, probably forever.

Although this is not the only place

along the Columbia where such prehistoric rock drawings are to be found, these at The Dalles are reputed to be of a finer quality than elsewhere. A few will be preserved by the Army engineers, but most will be lost.

Wax impressions and casts of some of the petroglyphs are being made so that there will at least be replicas of these remnants of a remote age from which to study the indigenous culture of the Northwest.

What time and weather could not destroy, man will wipe out with the throwing of a switch powered by energy from the very water which will cover these ancient relics.

OREGON

Eugene Library Site Chosen

Not surprising, but disappointing to proponents of a "directional" master plan for development of a civic center in Eugene, Oregon, was the vote selecting the site for the new library building. Although the master plan had provided for the library to be located within the area designated for the civic center—and accepted by city and county supervisors—the issue as to location of the

library was so controversial that it was put on the ballot.

Two other sites were suggested; one of these—the site of the old Frances Willard school, several blocks from the civic center, won by over twice the number of votes the civic center location received. Library board members had opposed the civic center site partly because of its park-like setting, onto which the main entrance would have opened, partly because they wanted the library at a point where it would be particularly accessible to downtown pedestrian traffic.

SEATTLE

Mrs. Wanamaker Files Suit

Pearl A. Wanamaker, for 16 years Washington State superintendent of public instruction and known as well during that period by architects as by educationists, has filed suit against a Seattle broadcasting station, KVI, and has announced plans for suing Fulton Lewis, Jr., radio commentator, and some 50 broadcasting stations which broadcast his program on last January 6 in which he falsely identified Mrs. Wanamaker with communism.

(Continued on page 48-16)

Buyers look for telephone planning in today's homes



Specify built-in telephone facilities
-a sign of good planning

say WELDON B. MANSFIELD and SHELDON W. PARKER, partners, Western Enterprises, Inc. Sacramento, California

Buyers of new homes "just naturally expect" built-in telephone outlets in convenient locations, report builders Mansfield and Parker. The same goes for concealed telephone wiring. Western Enterprises' newest development offers these features—plus two color telephones and six-months' service free of charge for each home.

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THE METROPOLITAN WEST

(Continued from page 48-14)

Although Lewis later admitted that the charges he had made were incorrect, the suits will ask damages aggregating some \$12,000,000 to \$15,000,000. Mrs. Wanamaker's affidavits state that as a result of the broadcast she has "been deprived of public confidence and has suffered an enormous amount of embarrassment, humiliation and mental agony and ridicule and has been held in contempt, calumny and ridicule, and as

a consequence has been exceedingly nervous and upset."

Mrs. Wanamaker, a panelist at a school committee seminar at the A.I.A.'s national convention last May in Los Angeles, was defeated in November in her try for re-election to the post of state superintendent of public instruction.

NEWS OF THE PROFESSION

Awards

Skidmore, Owings and Merrill, San Francisco architects and engineers, have been awarded an honorary sustaining membership in the Society of American Military Engineers for the firm's part "in advancing the knowledge of the science of military engineering."

Elections, Appointments

Anton Dropping, Boise, is the new president of the Idaho chapter, A.I.A. Other new officers are Charles W. Johnston, Payette, vice president; Glenn E. Cline, Boise, secretary-treasurer; Chester L. Shawver and Nat J. Adams, both of Boise, executive committee members.

Clarence J. Paderewski, San Diego, has succeeded Ulysses Floyd Rible, Los Angeles, as president of the California State Board of Architectural Examiners. Malcolm Reynolds, Oakland, is secretary of the board.

John Amundsen, Portland architect, has been appointed an assistant professor at the University of Oregon, and is also planning consultant in the Bureau of Municipal Research, Eugene, Ore.

James J. Chiarelli has succeeded Lloyd Lovegren as president of the Washington State chapter, A.I.A. Other new officers include Edwin Turner, first vice president, Arnold Gangnes, Harrison Overturf and retiring president Lovegren, directors. Harold W. Hall, second vice president, John L. Rogers, secretary, and A. O. Bumgardner, treasurer, were re-elected for second terms.

Robert R. Fritsch, Portland architect, has been named president of the Urban League of Portland by vote of the board of directors of the League.

Three Northern California engineers have been elected to office in the Prestressed Concrete Institute. They are Ben C. Gerwick, Jr., San Francisco, who was named vice president of the Institute, Harold A. Price and Professor T. Y. Lin, University of California, directors. The Institute will hold its 1957 convention in San Francisco.

New Addresses

McClure & Adkison, architects, have moved to 309 Sherwood Building, Spokane, Wash.

Francis A. Lockwood, architect, has opened offices at 2571 Shattuck Ave., Berkeley, Calif.

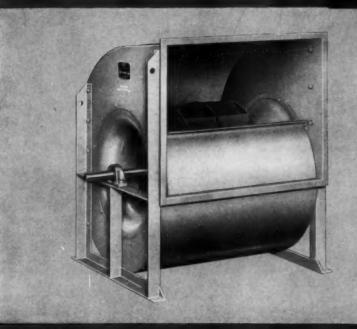
(More Professional News on page 48-22)



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WASTE SPACE

Regional Asset

Mount Hood and Mount Rainier are regional assets on which the Northwest has long capitalized but, says the *Timber Operator*, a Seattle-published journal of the lumber industry, architect Paul Thiry is just as much a regional asset. In a tribute to Mr. Thiry, columnist Jim Stevens ("Out of the Woods") also says:

"Paul Thiry is so kind in speech and gentle in manner that he is easily mistaken for a forester. But he is actually an architect. . . . Nearly all Thiry designs exhibit values of our native woods. No architect alive has had a finer hand than his in contriving nation-wide fame for Douglas fir, West Coast hemlock, western red cedar, and Sitka spruce. . . . He merits national renown, too, because of his record of public service, which includes labor and leadership for the American Institute of Architects."

This unusual tribute to an architect should please all architects, for good words, well deserved, about one of their number cannot help but reflect honor on the profession as a whole. Especially in a legislative year when brickbats make political hay, such a tribute to an architect is welcome. But more particularly it is honor justly due to one who has brought honor—and honors—to his own region.

Dear Editor

"Letters to the editor" columns in daily newspapers tell a lot about a place and a people. Some are written by crackpots, some by those with an axe to grind; but many are written by citizens genuinely interested in a current problem. Sometimes readers write answers to questions raised by writers, as did a man in the Seattle *Times* who answered a charge that architects' fees were too high on school jobs and that it would be better to have stock plans.

Not so, said the answerer: "The architect performs a very necessary service to the public for which he certainly is not overpaid. Most people will agree that American school architecture would be in the pot-bellied stove era if it were not for the forward trends of the American architectural profession." Then he listed what the architect does for his six per cent (the fee in Washington State) and the fact that he pays the engineers from it. An intrepid defender of a harried profession!

San Francisco letter writers feel strongly on matters esthetic and write in droves whenever something stirs their ire. Lately there have been quite a few issues to upset the pursuance of calm living by the Bay. Last fall, of course, it was the curved versus the straight freeway in front of the Ferry Building; then it was whether Dizzy Gillespie should play his jazz in the sacred confines of the Opera House. Early this year two controversies erupted at once. One had to do with the mayor's decision to locate the new North Beach branch library in the corner of a playground, contrary to the policy of the city's Park and Recreation Commission and to the desires of the area's residents.

The other was a storm of protest over the Indian-giving tactics of the Library Board which had announced a unanimous decision to turn down the prize tapestry for the Marina Branch Library (WESTERN SECTION, January 1957, 48-1).

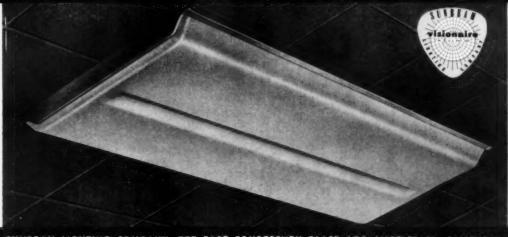
(Continued on page 48-20)



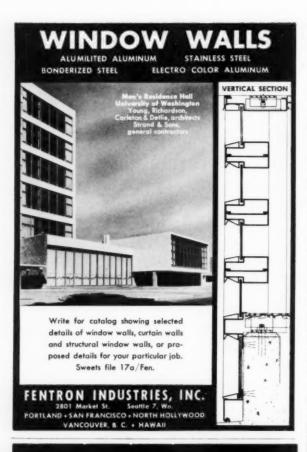
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WASTE SPACE

(Continued from page 48-18)

Faced with the public's obvious antipathy, the board recanted almost unanimously. The one dissenter clung to his earlier view that "it shouldn't be necessary to go all the way to France (where the tapestry is to be made) to get something—the artist only designed it here and it would be made in France." What would he say to the State Department's new embassies, foreign-built though American-designed?

Most recent outburst was started by a 10-year-old boy who had read a columnist's account of a talk by 82-year-old architect Arthur Brown Jr., who had told members of the Northern California chapter, A.I.A., that the city's new free-ways "are a shame, a defacement to the city. The trouble is they are all designed by engineers who are only looking for the cheapest way to do things." The 10-year-old said he wanted to "voice his agreement with Mr. Arthur Brown, Jr. San Francisco is a beautiful city but with all the freeways being built all the time, it is turning ugly. The freeways must "o"."

Among all these letters there was only one from an architect. John Bolles reminded readers of the architectural consultants for the Golden Gate and Bay bridges (Irving Morrow and Timothy Pflueger respectively) and suggested that it would be "wonderful" if there could be architectural consultants on the "frightful freeways."

Maybe everyone doesn't know much or care about the arts and architecture, but when the issue is clear and the controversy hot, the public can get mighty interested, fortunately. The trouble is that the controversy doesn't get to them until late in the day. There's no such thing as being too early in support of the arts. And that means architecture, too.

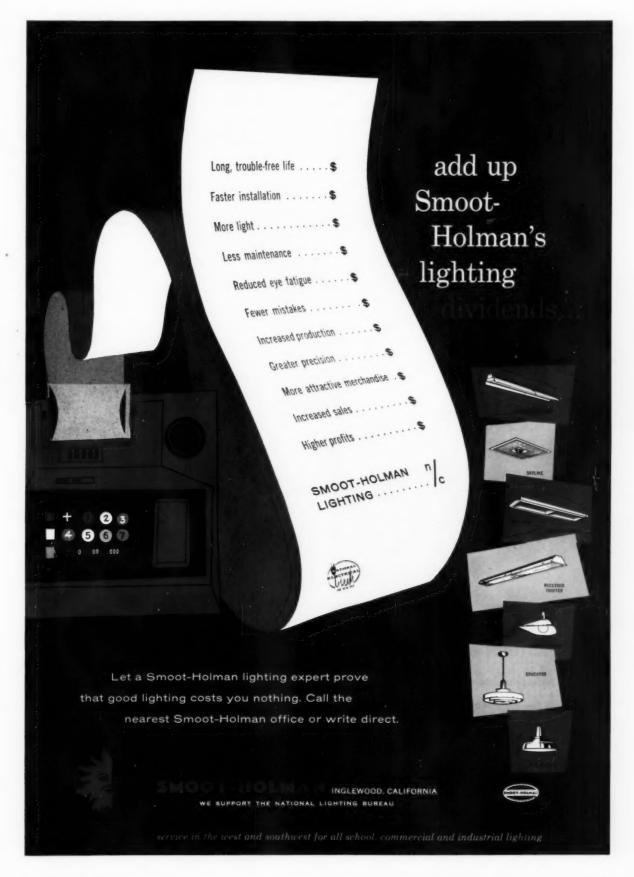
Art for Art's Sake

The public's interest in art and related exhibitions seems to be on the upgrade, if facts and figures from several Western cities indicate a true trend. Not only did the Denver Art Museum's paid membership list grow by a healthy 18 per cent during 1956, but the Gladys Lloyd Robinson and Edward G. Robinson collection of impressionist and modern paintings drew capacity crowds when it was shown in Los Angeles and San Francisco—it broke all paid attendance records at San Francisco's Palace of the Legion of Honor. On its last day in San Francisco, a long line of visitors waited patiently in the rain to get in as earlier arrivals came out.

The San Francisco Museum of Art put on a program on "How Good is American Design Today" in connection with a touring show of "Design in Scandinavia" and drew a crowd on a cold rainy night that almost filled its large auditorium. A panel made up of an architect, an educator, two industrial designers, a textile weaver, a merchandiser and an editor considered the question and gave this consensus: American design today is tops when it is good, very bad when it is bad, has regional characteristics in some fields — like architecture and some art forms — and countrywide characteristics in others — as in mass produced objects.

It's not a matter of giving the public what it wants (it doesn't really know) but of picking its interest by really good content, well publicized. That's one for architects to mull over, too.

E. K. T.



NEWS OF THE PROFESSION

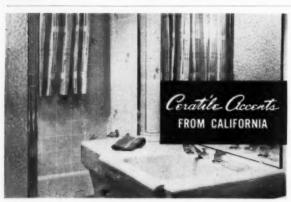
Planners Hold National Meet

The annual national planning conference of the American Society of Planning Officials will be held in San Francisco's Sheraton-Palace Hotel March 17-21 with a program which includes consideration of such topics as "Urbanism and the County," "Noise Control," "Airports and Heliports," "Urban Renewal Reexamined," "The Industrialist and Planning," and "Implications of New Sources of Energy" (solar and nuclear). Major addresses include one by New Yorker William Zeckendorf. Westerners on the program will be Corwin Mocine, Oakland; Harold Wise, Palo Alto; Roger Lapham, Stuart P. Walsh, San Francisco; Milton Breivogel, Simon Eisner, Los Angeles; Karl Belser, Santa Clara, Former Westerner James Lash, ex-director of San Francisco's Redevelopment Agency, now executive vice president, A.C.T.I.O.N., will lead a panel on urban renewal.

Home of the Year Award in Seattle



Seattle architect Benjamin McAdoo (right) won the third annual Home of the Year award given jointly by the Washington State chapter. A.I.A., and the Seattle Times for a house designed for Mr. and Mrs. George Hage. Winning house was chosen from 12 presented monthly during 1956 in Times, and toured by capacity crowds just before owners moved in Award, wood sculpture by George Tsutakawa, Seattle sculptor (left), was presented by chapter president James J. Chiarelli at awards dinner where clients and contractor were also honored. Program will be continued



NEW AUTUMN LEAVES PATTERN

Selected by H. Cedric Roberts and Sons for bathroom of the modern Electri-Living home in Anaheim. The Autumn Leaves pattern is available in four color combinations. Brown Leaves inserted in an Oatmeal background is the design used in the Electri-Living home bathroom. Matching Van Luit wallpaper was used to accentuate this bathroom interior. Architect -John Kewell - A.I.A. Kenngott-Brossmer -Interior Designers.



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CALENDAR OF WESTERN EVENTS

- · March 9: Honor Awards banquet, A.I.A. chapters of Northern California, Sheraton-Palace Hotel, San Francisco
- March 17-21: National conference, American Society of Planning Officials, Sheraton-Palace Hotel, San Francisco
- March 18–21: Pacific Coast Plastics Exhibition, and annual conference, Society of Plastics Industry, Shrine Exposition Hall, Los Angeles
- March 18–29: National Resources Conference, conducted by Industrial College of the Armed Forces, San Antonio, Texas
- · March 21: Pier Luigi Nervi, talk sponsored jointly by Northern California chapter, A.I.A., and Structural Engineers Association of Northern California, Sir Francis Drake Hotel, San Francisco
- March 25-29: Tenth Western Metal Exposition and Congress, Pan American Auditorium, Los Angeles
- April 16–19: National Art Education Association Conference, Hotel Statler, Los Angeles
- · April 18: "Architecturally Speaking," program on Denver's fine art resources, sponsored by Friends of the Library and Adult Education Council, Denver, Colo., Public Library
- May 4–12: California Spring Home and Garden Show, Oakland Auditorium, Oakland
- May 7-12: Annual convention, National Association of Architectural Metal Manufacturers, San Francisco
- · May 27-June 3: Utah Home Show, Liberty Park, Salt Lake City
- June 1-July 31: "Designer Craftsmen of the West, 1957," juried exhibition, M. H. de Young Memorial Museum, Golden Gate Park, San Francisco
- June 11-13: Western Plant Maintenance and Engineering Show and Conference, Civic Auditorium, San Francisco

WESTERN SECTION

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Country charm . . . modern style! Blue and white willow ware inspired the patterned wall in squares of Styron® plastic tile . . . and sleek white tiles face the work counter. Decorative applications like this lift your homes out of the ordinary and give them exciting new home-owner appeal. With all of the shapes and fabulous colors available in plastic wall tile made of Styron, you'll create beautiful backgrounds for homes in any price range.





Interiors in this portfolio were created by John and Earline Brice, internationally famous designers.

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IN THE BATHROOM





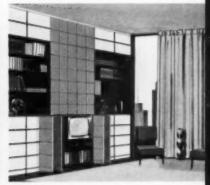
IDEA! Lovely colors of Styron and tile shapes combined to create delightful trompe-l'oeil louvers on a bathroom wall.



IDEA! A decorative, over-all pattern in easy-to-clean Styron plastic tile for a practical entry wall.



IDEA! Make a bathroom seem wider with bold, horizontal stripes of Styron plastic tile on one wall.



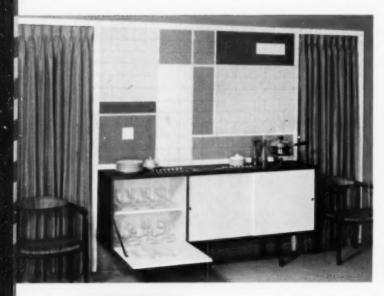
IDEA! Turn a plain fireplace wall into a colorful entertainment center with king-size Styron plastic tile.





ALL THROUGH THE HOUSE

Cheerful candy stripes for practical beauty on walls and ceiling of a child's room... "gingham" wall to brighten up a laundry area... handsome "mural" wall for a dining room... matching walls and counter facings for a modern kitchen. The decorating possibilities are endless with Styron plastic wall tile. These dramatic ideas are being sold to consumers across the country. You can turn these ideas into profitable prestige!





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guaranteed plastic wall tile made of Styron. The beautiful interiors shown in this portfolio will be featured in full-color advertising and editorials in leading national magazines and in hard-hitting, year-'round promotions. They'll extend today's consumer acceptance into the wide field of interior decorating. They'll sell your clients.

Give your homes beautiful new backgrounds that create sales. Make the most of Styron plastic wall tile . . . its extensive color

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YOU CAN DEPEND ON





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... brings unique combination of properties for low-cost installation

The big swing is on—to insulation made of Styrofoam* (a Dow plastic foam).

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engineering data

| thermal properties | | physical propertie | s | Styrofoam 22 | Styrofoam 33 |
|--|--|--------------------|--|---|--|
| Thermal Conductivity ("K" factor) B.T.U./ft./hr./in./°F. Linear Thermal Coefficient of Expansion Specific Heat Resistance to heat (Maximum recommended temperature for continuous use) | Average "K" Factor of 0.25 at mean temperature of 40°F. .00003 to .00004 in./in./°F. between 0°F. and 80°F. 0.27 B.T.U./ib./°F. at 40°F. Styrofoam 22—175°F. Styrofoam 33—155°F. | | (p.s.i.) (p.s.i.) (p.s.i.) (p.s.i.) (p.s.i.) (p.s.i.) (p.s.i.) (p.s.i.) (p.s.i.) | 1.6-2.0 16-32 45-61 27-36 42-61 1200-1700 1000-1285 700-1600 | 1.7-2.3 16-38 65-95 30-40 48-99 1500-2000 1250-1760 1000-1300 |

| water resistance properti | es | vapor transmission | |
|---|---|---|---|
| Capillarity Water adsorption (when subjected to 90°F., 90% relative humidity for 15 days) | None Less than 0.03% by volume | When Styrofoam acts as a barrier between spaces having different atmospheric conditions | 1.0-2.0 grains/sq. ft./hr./in. of thickness/in. of Hg va- por pressure difference |
| Water adsorption (complete submersion for one week) | Water pickup only on surface cells less than 0.15 lb./sq. ft. of area | | |



Styrofoam adheres readily to masonry. Portland cement mortar bonds it to masonry easily, quickly, permanently. Assures damp-free, comfortable homes, offices, stores, factories.

COSTS as plaster-base insulation:

comparative (u) values

| | wall thickness | | (u) values | |
|-------------|-------------------|-----|------------|------|
| wall type | Wall thickness - | A* | B* | C* |
| Brick | 8" | .50 | .30 | .158 |
| 4" face | 12" | .36 | .24 | .139 |
| Rest common | 16" | .28 | .20 | .123 |
| Concrete | 6" | .79 | .39 | .180 |
| | 8" | .70 | .36 | .175 |
| | 10" | .63 | .34 | .170 |
| | 12" | .57 | .33 | .166 |
| Concrete | 8" | .56 | .32 | .164 |
| Block | 12" | .49 | .30 | .158 |
| Cinder | 8" | .41 | .27 | .146 |
| Block | 12" | .38 | .25 | .142 |

*A=plain wall

Where: *B=furred, lathed and plastered wall

*C=1" thick Styrofoam with plaster direct—no furring or lathing

Styrofoam is superior

for many applications



Curtain Walls—Panels with Styrofoam cores are available from many manufacturers.



Low-Temperature Pipe Covering and Equipment— Only Styroloam offers the right combination of properties.



Cavity Walls—Styrofoam proves completely satisfactory as cavity wall insulation for light or heavy construction.



Perimeter Heating—Perimeter heating systems operate at maximum efficiency when Styrofoam is used.

The Dow Chemical Company—first in foam answers your questions about Styrofoam

Just how is Styrofoam different from old-fashioned insulation?

A Styrofoam consists of millions of tiny cells, all uniform, and each completely self-contained, air-tight, preventing passage of water vapor.

Q How is Styrofoam made?

A Polystyrene, a rugged plastic, is expanded forty times under heat and pressure.

Q When was Styrofoam first produced commercially?

A In 1942, The Dow Chemical Company produced plastic foam by expanding polystyrene-the plastic which offers the best combination of characteristics for low-temperature insulation. Immediately, the U.S. Navy began using it as a flotation material.

Q Why does Styrofoam have high compressive strength?

A Because of its unique cellular structure. That's why Styrofoam can be used for self-supporting walls or have concrete floors poured over it. It will support 3,000 lbs. per square foot.

Q is it true that one man can pick up a whole pile of Styrofoam boards?

Yes. A board foot weighs only 2.4 ounces. One workman can easily carry 100 bd. ft.

Q Why can't water penetrate Styrofoam?

The noninterconnecting cellular structure permits water only on the open cut surface cells.

Q How is it for thermal conductivity?

A Tests show the low thermal conductivity of Styrofoam cannot be matched by any other insulation with comparable properties. The average "K" factor is 0.25 B.T.U./ft./hr./in./°F. and it stays low since there is no water pickup.

Q How can Styrofoam last a lifetime?

A This homogeneous Dow plastic foam resists rot, mold and deterioration. Styrofoam has no odor, no food value-it does not attract rodents or vermin. And water cannot penetrate it. Result: consistent, uniform insulation for the life of the structure.

Q What kind of tools does it take to install Styrofoam?

A Only ordinary woodworking tools are required to cut and shape it to fit any application. It is nonirritating to the skin and is not brittle. Cannot flake or dust. It's an easily installed insulation.

Q Where is Styrofoam used?

A In 1946, The Dow Chemical Company, first in foam, offered their production to the industrial refrigeration field where only the best is good enough. With new production facilities, Styrofoam has now become widely available to users in a broad number of significant applications.

Q What is its most unique feature?

A It has a combination of essential properties vital to good insulation including lack of water adsorption and constantly low "K" factor.

Q In what sizes can I get it?

Styrofoam is available for immediate shipment in 3-ft., 8-ft., and 9-ft. lengths, 12-in. and 16-in. widths and comes in thicknesses of 1, 11/2, 2, 21/2, 3, 4 inches.

Q Where can I get it?

At your local building supply dealer's. He can order from his Styrofoam distributor.

FREE BROCHURE OF CONSTRUCTION DETAIL DRAWINGS



Learn how the Styrofoam combination of properties can be turned to your profit. Address: THE DOW CHEMICAL COMPANY, Midland, Michigan-Plastics Sales Department PL 1739Y.

For further information, contact your nearest distributor: CALIFORNIA, Colma: Western Foam Products, Inc. • CALIFORNIA, Los Angeles 13: Pacific Foam Products Company • FLORIDA, Tampa: The Soule Company • GEORGIA, Atlanta 8: Badham Sales Company • ILLINOIS, Chicago 11: The Putnam Organization, Inc. • KANSAS, Kansas City: Styro Products, Inc. • MASSACHUSETTS, Ipswich: Atlantic Foam Products Company • MICHIGAN, Detroit: Par-Foam, Incorporated • MICHIGAN, Midland: Floral Foam Products • MINNESOTA, Minneapolis 8: Edward Sales Corporation • MONTANA, Billings: Madden Construction Supply Company • NEW YORK, Rochester 20: William Summerhays Sons Corp. • NEW YORK, Long Island City 1: Styro Sales Company, Inc. • OHIO, Cincinnati: The Seward Sales Corporation • OHIO, Cleveland 13: Structural Foams, Inc. • PENNSYLYANIA, Plymouth Meeting: G & W H Corson, Incorporated • TEXAS, Houston: The Emerson Company • UTAH, Salt Lake City 10: Utah Lumber Company • WASHINGTON, Seattle 9: Wiley-Bayley Inc. • WISCONSIN, Milwaukee: S & S Sales Corporation • CANADA, Kitchener, Ontario: Durofoam Insulation, Ltd. Or write THE DOW CHEMICAL COMPANY, Midland, Michigan-Plastics Sales Department PL 1739Y.



YOU CAN DEPEND ON



For insulation: Styrofoam brings best combination of properties

| COMPARE | INSU | LATI | IONS | | |
|---------------------------------------|-----------|------|------|---|--|
| STYROFOAM* | STYROFOAM | A | | c | |
| Low "K" factor | x | | X | X | |
| Superior Water Resistance | x | Х | | | |
| High Compressive Strength | x | х | | X | |
| Light Weight | х | | X | | |
| Superior Resistance to rot and vermin | x | x | | | |
| Easy handling and fabrication | x | | | | |
| Low-cost installation | x | | X | | |
| Lowest cost per year | x | | | | |

Permanent "K" factor average, 0.25. Avg. density, 1.8 lbs. per cu. ft. No odor. No food value. Pleasant to work with. Fabricates with common tools. Does not crumble or settle.

Cold storage plant's experience proves it!



Eleven years ago, Flint Cold Storage Co., a large Flint, Michigan, firm, used Styrofoam (a Dow plastic foam) to assure superior insulation in its original plant. Many additions have been made since then—including a very low temperature fruit freezing plant. And Styrofoam has been used in every case (see photo)

for both equipment and building insulation.

Flint's Russell Soule writes, "We are heartily endorsing it to everyone for its low cost, high insulation efficiency, as well as its ease of installation." For complete information write the downwith the downward company, Midland, Michigan—Plastics Sales Department PL1700M.

*Styrofoam is a registered trademark of The Dow Chemical Company

YOU CAN DEFEND ON



THE RECORD REPORTS: CONSTRUCTION COST INDEXES

Labor and Materials

U. S. average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

ATLANTA

| Period | Resid Brick | lential Frame | Apts., Hotels Office Bldgs. Brick and Concr. | | rcial and Bldgs. Brick and Steel | Resid | lential Frame | Apts., Hotels Office Bldgs. Brick and Concr. | Factory Brick and Concr. | Bldgs. Brick and Steel |
|-----------|----------------|------------------|--|-------|--|-------|----------------------|--|-----------------------------------|------------------------|
| 1930 | 127.0 | 126.7 | 124.1 | 128.0 | 123.6 | 82.1 | 80.9 | 84.5 | 86.1 | 83.6 |
| 1935 | 93.8 | 91.3 | 104.7 | 108.5 | 105.5 | 72.3 | 67.9 | 84.0 | 87.1 | 85.1 |
| 1939 | 123.5 | 122.4 | 130.7 | 133.4 | 130.1 | 86.3 | 83.1 | 95.1 | 97.4 | 94.7 |
| 1946 | 181.8 | 182.4 | 177.2 | 179.0 | 174.8 | 148.1 | 149.2 | 136.8 | 136.4 | 135.1 |
| 1947 | 219.3 | 222.0 | 207.6 | 207.5 | 203.8 | 180.4 | 184.0 | 158.1 | 157.1 | 158.0 |
| 1948 | 250.1 | 251.6 | 239.4 | 242.2 | 235.6 | 199.2 | 202.5 | 178.8 | 178.8 | 178.8 |
| 1949 | 243.7 | 240.8 | 242.8 | 246.4 | 240.0 | 189.3 | 189.9 | 180.6 | 180.8 | 177.5 |
| 1950 | 256.2 | 254.5 | 249.5 | 251.5 | 248.0 | 194.3 | 196.2 | 185.4 | 183.7 | 185.0 |
| 1951 | 273.2 | 271.3 | 263.7 | 265.2 | 262.2 | 212.8 | 214.6 | 204.2 | 202.8 | 205.0 |
| 1952 | 278.2 | 274.8 | 271.9 | 274.9 | 271.8 | 218.8 | 221.0 | 212.8 | 210.1 | 214.3 |
| 1953 | 281.3 | 277.2 | 281.0 | 286.0 | 282.0 | 223.3 | 224.6 | 221.3 | 221.8 | 223.0 |
| 1954 | 285.0 | 278.2 | 293.0 | 300.6 | 295.4 | 219.6 | 219.1 | 223.5 | 225.2 | 225.4 |
| 1955 | 293.1 | 286.0 | 300.0 | 308.3 | 302.4 | 225.3 | 225.1 | 229.0 | 231.5 | 231.8 |
| Det. 1956 | 313.0 | 303.8 | 324.1 | 334.7 | 329.2 | 239.7 | 238.0 | 245.8 | 248.2 | 252.9 |
| Nov. 1956 | 313.2 | 304.0 | 324.4 | 334.9 | 329.4 | 239.8 | 238.1 | 245.5 | 248.1 | 250.8 |
| Dec. 1956 | 316.0 | 306.6 | 327.9 | 338.7 | 332.0 | 239.8 | 238.1 | 245.5 | 248.1 | 250.8 |
| | | % | increase over 19 | 939 | | | % increase over 1939 | | | |
| Dec. 1956 | 155.9 | 150.5 | 150.9 | 153.9 | 155.2 | 177.9 | 186.5 | 158.1 | 154.7 | 164.8 |

ST. LOUIS

SAN FRANCISCO

| Dec. 1956 | 162.9 | 162.8 | 144.2 | 1939 | 149.7 | 167.0 | % in | crease over 1 151.8 | 151.5 | 159.7 |
|-----------|-------|-------|-------|-------|-------|-------|-------|------------------------|-------|-------|
| Dec. 1956 | 289.7 | 281.2 | 289.9 | 300.8 | 297.2 | 281.9 | 271.9 | 295.6 | 306.6 | 302.5 |
| Nov. 1956 | 289.3 | 280.7 | 289.5 | 300.6 | 296.5 | 282.6 | 272.8 | 295.8 | 306.8 | 302.9 |
| Oct. 1956 | 289.1 | 280.5 | 289.2 | 300.4 | 296.3 | 281.0 | 271.8 | 293.4 | 302.5 | 301.0 |
| 1955 | 273.3 | 266.5 | 272.2 | 281.3 | 276.5 | 268.0 | 259.6 | 275.0 | 284.4 | 279.6 |
| 1954 | 266.6 | 260.2 | 263.7 | 273.3 | 266.2 | 257.4 | 249.2 | 264.1 | 272.5 | 267.2 |
| 1953 | 263.4 | 256.4 | 259.0 | 267.6 | 259.2 | 255.2 | 257.2 | 256.6 | 261.0 | 259.7 |
| 1952 | 259.1 | 253.2 | 249.7 | 255.0 | 249.6 | 250.2 | 245.0 | 245.6 | 248.7 | 249.6 |
| 1951 | 252.0 | 248.3 | 238.5 | 240.9 | 239.0 | 245.2 | 240.4 | 239.6 | 243.1 | 243.1 |
| 1950 | 232.8 | 230.7 | 221.9 | 225.3 | 222.8 | 227.0 | 223.1 | 222.4 | 224.5 | 222.6 |
| 1949 | 221.4 | 220.7 | 212.8 | 215.7 | 213.6 | 213.0 | 207.1 | 214.0 | 219.8 | 216.1 |
| 1948 | 227.9 | 231.2 | 207.7 | 210.0 | 208.1 | 218.9 | 216.6 | 208.3 | 214.7 | 211.1 |
| 1947 | 202.4 | 203.8 | 183.9 | 184.2 | 184.0 | 193.1 | 191.6 | 183.7 | 186.8 | 186.9 |
| 1946 | 167.1 | 167.4 | 159.1 | 161.1 | 158.1 | 159.7 | 157.5 | 157.9 | 159.3 | 160.0 |
| 1939 | 110.2 | 107.0 | 118.7 | 119.8 | 119.0 | 105.6 | 99.3 | 117.4 | 121.9 | 116.5 |
| 1935 | 95.1 | 90.1 | 104.1 | 108.3 | 105.4 | 89.5 | 84.5 | 96.4 | 103.7 | 99.7 |
| 1930 | 108.9 | 108.3 | 112.4 | 115.3 | 111.3 | 90.8 | 86.8 | 100.4 | 104.9 | 100.4 |

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city
$$A = 110$$

index for city $B = 95$

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

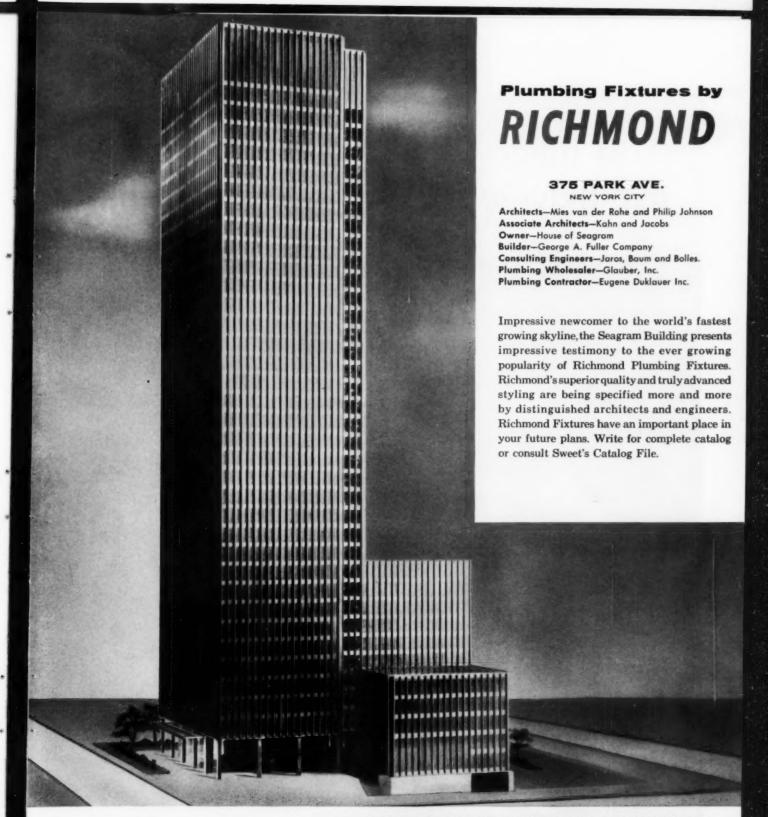
$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926–29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.



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5 miles of Gold Seal Floors exclusively for Maine State Office

ARCHITECTS: Miller & Beal, Inc., Portland, Maine, ASSOCIATE ARCHITECTS: Desmond & Lord, Boston, Mass, FLOORING CONTRACTOR: Portland Veos Tile and Flooring Co., Inc., Portland, Maine,



Aerial view of the new Maine State Office Building with the Capitol building at the rear.

specified Building!





Here's an interior view showing a small part of the installation of Gold Seal Inlaid Linoleum. Actually, about 3½ acres of floor space are covered with this ½" burlap-backed "Veltone."

More than 148,000 square feet of Gold Seal Veltone® 1/8" Inlaid Linoleum has been specified and installed in the new Maine State Office Building at Augusta, Maine.

Originated by Gold Seal, "Veltone" provides an attractive, long-wearing, all-over decoration for use in all public buildings, schools, hospitals, offices, etc. Veltone's excellent resiliency provides quiet and comfort under foot. The unique design of this Inlaid Linoleum literally hides foot marks...it's exceptionally easy to clean and keep clean because of its density and surface smoothness. This ease of maintenance naturally reduces the expense of building service and upkeep. For those who prefer the modern textured look in Inlaid Linoleum, Gold Seal offers Sequin®—1/8" thick—with all the advantages of "Veltone."

Gold Seal Vinylbest* Tile and Gold Seal Asphalt Tile were also used in special areas such as the food and photo laboratories.

Specifications—Gold Seal Veltone: 6' wide yard goods, ½" gauge, burlap-backed.

Install over suspended wood, or suspended concrete under-floors.

Available in 8 colors—Pompeian Grey, Heather Tan, Spicewood,
Bermuda Grey, Light Tan, Grey, Brown, Surf Green. Also made
in standard gauge for residential use—in 9 colors.

Send for Free Technical Data Book—"Why Resilient Floors"—containing 36 pages of information to help you specify the correct resilient floor for any type of commercial, institutional or residential building. Address Architects' Service Department, Gold Seal Floors and Walls, Congoleum-Nairn Inc., Kearny, N. J.

PROVIDE YOUR CLIENTS WITH THE FINEST IN FLOORING - SPECIFY GOLD SEAL

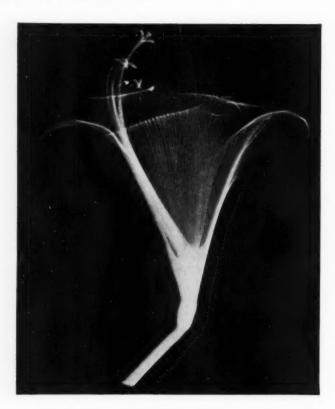


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The New Landscape. By Gyorgy Kepes. Paul Theobald and Co. (Chicago) 1956. 384 pp., 452 Illus., some color. \$15.50

KEPE'S NEW VOLUME RELATES ART AND SCIENCE; VIEWS PRESENT ARTISTIC DILEMMAS AND HOPES

By EDGAR KAUFMANN, JR.

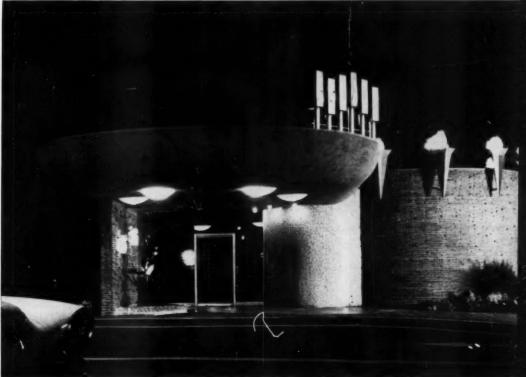
EQUIPMENT — mechanical and electronic — pre-empts half the client's dollars, produces half the architect's fee. What's left is divided between structure and, perhaps, the art of architecture. Can architecture then expect to continue as an art or is this only a fading image, more honored in the breach? To any architect concerned with this question and similar ones, The New Landscape will be an essential source book, for it is filled with indications of better ways to formulate the problem, ways that permit rather than block solutions. The New Landscape solves no problems but it shows rapprochements between art and science, reaching toward a more complete grasp of the human condition than either has provided for our time. Not only architects but many scientists and artists are in a quandary, and Kepes' book is essentially a round-up of scouts' reports (Continued on page 67)





Eldon C. Davis, A.I.A. **Armet and Davis** Los Angeles

"In our opinion, INSTITU-TIONS Magazine is performing an invaluable service in recording the metamorphosis in postwar design. Neither myself nor my partner, Louis Armet, know of a better clearing house for innovations in materials, ideas and trends. To design in a manner that serves the primary objective of a client, one must know a client's needs of the moment, of next year and of years to come. This can best be brought about by an excellent reporting and recording service.



Huddle Imperial Restaurant, Los Angeles

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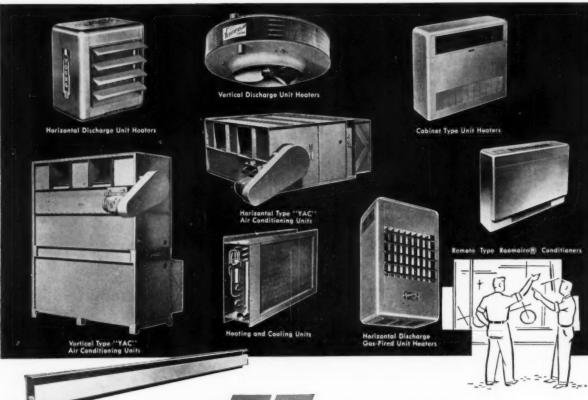


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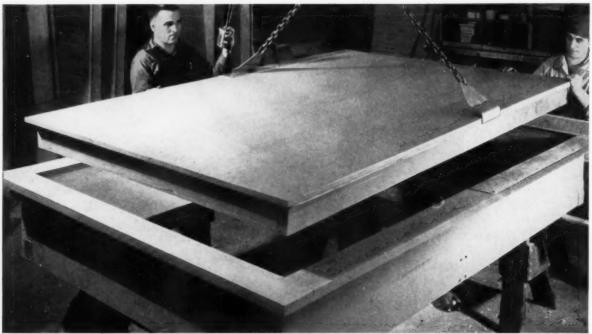
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| Name | |
| Address | |
| CityZ | one State |

Inside and out...Jamison cold storage doors show quality construction



Box girder construction of highest quality boat hull plywood gives maximum strength and rigidity. Large series "50" door is shown as door and frame meet on assembly line.



Insulation—Each block of insulation is individually measured and cut to give maximum insulation efficiency.

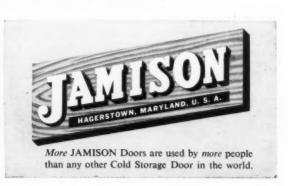
Materials and workmanship assure top efficiency in rugged service

The reason behind the reputation of the Jamison Series "50" Cold Storage Door is apparent here. Some of the most important parts and components are never seen by customers... Yet operational efficiency in all types of installations continues to prove that Jamison quality materials and precision workmanship mean superior protection and overall economy.

If you have plans for modernization or expanding, first get the story on Jamison's Series "50" Door. Write for your copy of Section 3. Jamison Cold Storage Door Co., Hagerstown, Md.



Tight Seal is assured by carefully applied gasketing. Gasket is soft sponge rubber resistant to acids, oils and greases.



REQUIRED READING

(Continued from page 62)

on admittedly arduous escape routes to lands of promise.

In sequence Kepes indicates the convergences of art and science as they face their respective limitations; the role of symbols from child art to mathematics; the autointoxication of our world as we've built it; the increased control of scale, sensitivity and reliability in investigating the cosmos; the relatedness of pattern and process; the significance of change; the interdependence of modules and rhythms; and so on in abundant recognition of the dilemmas and hopes of our day. No final theory or dogma is proposed, no comparisons are insisted on; this remains "a book of allusions, not conclusions."

Kepes tells at once that in this new work of his, "visual images are the content, verbal statements are the illustrations." Pictures come from many sources, revealing long and impassioned research. Words are garnered with equal skill and ingenuity. Besides the generally admirable text of the author, special contributions were written by Gropius, Giedion, Neutra, Weidlinger, Charles Morris, Norbert Wiener, Katherine Lonsdale, Heinz Werner, Leger, Helion, Gabo, etc. In the first section alone (out of ten) apposite quotations are made from Aquinas, Bacon, Blake, Belluschi, Coleridge, Assirer, Delacroix, Dewey, Helmholz, Nietzsche, Plato, Sullivan, Whitman and Wright. The pictures are equally diversified. Kepes has kept all this in context, aiming to follow a plan which he quotes from Charles S. Pierce: "Its reasoning should not form a chain which is no stronger than its weakest link, but a cable whose fibers may be ever so slender, provided they are sufficiently numerous and intimately connected."

Ten years of persistent work went into this volume; the results justify the effort. The layouts, which Kepes did himself, show time and again the rewards that can be reaped from a union of art and science. Thus the aspect of the book is one proof of the theme propounded. Here is a volume that will feed imagination for a long time.

LETHABY SEEKS ART MOTIVES BY PAMELA C. FORCEY

Architecture, Nature and Magic. By W. R. Lethaby. George Braziller, Inc. (N. Y.) 1956. 155 pp. Illus. \$3.95

(Continued on page 426)



It's CAST IRON throughout at the Rancho Cabrillo Subdivision San Diego, California



the Rancho Cabrillo Subdivision



Only the finest of materials was used in these homes, including beautifully appointed kitchens and cast iron soil pipe from street to roof.

Tri-W Builders, developers of the beautifully designed RANCHO CABRILLO subdivision in San Diego, California, has featured quality construction in all of the 675 modest priced but charming "Great America Homes" in this 215-acre residential area.

Throughout this large development the complete plumbing system - street to roof - is CAST IRON SOIL PIPE. This includes Cast Iron house sewers, main vents, branch vents, and drains -insuring home buyers permanent freedom from plumbing drainage trouble and expense.

Attractive homes at Rancho Cabrillo have met a wonderful reception. More than 100 were sold recently before models could be completed and opened for inspection. They feature three and four bedrooms, with 1, 11/2 and 2 baths, built on lots varying in size from 60x100 feet to half an acre, with the finest of materials used throughout. All homes are fully landscaped with trees, shrubs and plants.

With 32 years' broad building experience, Tri-W Builders has a fine reputation for quality workmanship in all subdivision products - a policy that has never failed to pay in a big way.

Our Company does not manufacture Cast Iron Pipe, but supplies many of the nation's leading foundries with quality pig iron from which pipe is made.



WOODWARD, ALABAMA



Glass-clad buildings of

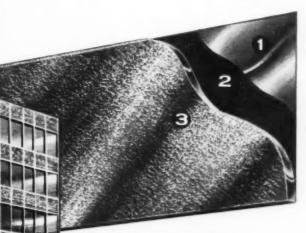
HUETEX

... to beautify, insulate, endure

HUETEX is an ideal low-maintenance, high-quality spandrel material. Lasting beauty is assured by the permanence of ceramic enamel color protected from the elements by glass. And the glass is tempered to increase its mechanical and impact strength.

The unique aluminum coating on the back of HUETEX acts as a barrier to radiant energy. Heat loss in winter and heat gain in summer may be reduced as much as 42%.

HUETEX can be used with a variety of framing systems. It is available in 12 beautiful standard colors, or custom-made to your color sample. For descriptive folder, send coupon on page 4 of this advertisement.



1 ALUMINUM.

welded to the back, protects the enamel, reflects heat, insulates...an exclusive HUETEX feature.

2 CERAMIC ENAMEL.

fused to the back of the glass, adds permanent beauty in the color desired.

3 TEMPERED GLASS.

5/16" thick, is textured on the weathering side to subdue bright reflections.



made by BLUE RIDGE GLASS CORP. Kingsport, Tenn.

sold by LIBBEY · OWENS · FORD Glass Distributors





South Bend Federal Savings and Loan Bank Architect: N. Roy Shambleau, South Bend, Indiana





PATTERNED GLASS

Glass at its peak of decorative beauty . . . fashioned for dramatic yet practical effects in offices, stores, public buildings, homes. Used here as a room divider, this translucent glass shares the light but divides the space and insures privacy. Choose from a variety of distinctive patterns, all of which blend with other building and decorating materials.

SECURIT® DOORS

Complete your decorative plan with a Blue Ridge Securit Interior Glass Door that matches the Muralex pattern in this wall of translucent glass. Actually, the door appears as another panel giving a light, airy feeling of spaciousness to the rooms on both sides. The Securit Door is made of tough, tempered glass to withstand rough treatment. Complete with your choice of chrome or bronze-finished hardware. For more information on Blue Ridge Patterned Glass and Securit Doors, use the coupon on the following page.

Doors and Partitions of

BLUE RIDGE PATTERNED GLASS



made by BLUE RIDGE GLASS CORP. Kingsport, Tenn.

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AKLO® Glass

Filters Daylight,

Reduces Glare

and Sun Heat



Brooklyn-Parma Y. M. C. A., Cleveland, Ohio . Architects: Travis G. Walsh, A. I. A., and Associates

Aklo Glass helps you meet a constant design challenge . . . to get the full benefits of daylight without the discomforts of sun heat and glare. This Cleveland gymnasium illustrates a successful solution.

Aklo Glass was used to subdue sun and sky brightness and to reduce direct heat from the sun. Its blue-green color even

makes the interior look cooler. $\frac{1}{4}$ " Aklo reduces transmission of the sun's radiant heat energy as much as 44%.

Aklo is available in Hammered and Finetex patterns (frosted, if desired), wired or unwired. Widely used in walls and skylights of factories, schools and public buildings. Technical information available upon request. Use coupon below.

SEND FOR DETAILED INFORMATION

Libbey Owens Ford Glass Company 608 Madison Ave., Toledo 3, Ohio

Please send me information on the following Blue Ridge Glass products:

☐ Huetex

☐ Securit Doors

Patterned Glass

State

☐ Aklo

Name.

(please print

Street

City_

Zone__



made by BLUE RIDGE GLASS CORP.



sold by LIBBEY - OWENS - FORD Sloss Distributors (listed under "Gloss" in the Backs up your promise of quality...the doors with the lifetime guarantee

RODDISCRAFT Golden Dowel Doors

(all wood, solid core)

The golden registration plate on every Roddiscraft Golden Dowel Solid Core Door is proof to your clients of the quality you are giving them-a door that will stay straight, true, beautiful for the life of the installation. This lifetime guarantee dramatizes the fact that you have provided the finest door.

Of course, what makes possible such a long-term guarantee is the unique construction of Roddiscraft Golden Dowel Solid Core Doors. They are all wood, with the proven stability of staved core construction. In addition, each Golden Dowel Door is TIME CONDITIONED by an exclusive Roddis process. The result is a door that is not only sound-deadening and fire-resistant, but a door that defies time.

For complete specifications, write for our new door catalog, or see Sweet's Architectural File.



... one source for all your wood doors SOLID CORE . HOLLOW CORE . X-RAY . FIRE (B LABEL) in a wide variety of beautiful woods

Golden Dowel Fire Doors Bearing the UL one-hour B-label plate, these all-wood fire doors are also guaranteed for the life of the installation. Cores are homo-geneous slabs formed of fireproofed wood particles bonded with phenolic adhesive under pressure and heat. This new core construction assures lifetime stability, low heat transmission, good sound resistance and superior screw-holding ability.

RODDIS PLYWOOD CORPORATION . MARSHFIELD, WISCONSIN . WAREHOUSES IN PRINCIPAL CITIES

450,000

Square Feet of PERMALITE PLASTER*

PITTSBURGH STATE OFFICE BUILDING

Pittsburgh, Pennsylvania

A project of The General State Authority

Columns and Beams:

270,000 sq. ft. 4-hour fire ratings have been gained here by Permalite plaster, applied 1¾" thick over self-furring lath on beams and columns.

Ceiling, spandrel, and girder beams are plastered with Permalite plaster,

1" to 1½" thickness.

Ceilings: 180,000 sq. ft. Metal lath ceilings are fire-protected by one inch of plaster (measured from the face of the lath).

Permalite plaster is applied here as a ¾"-thick brown coat, by an E-Z-On plastering gun.

*Permalite plaster refers to plaster made with Permalite perlite aggregate.

Perlite Division, Great Lakes Carbon Corp.

612 So. Flower St., Los Angeles 17, California

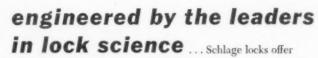
Architects: Altenhof and Bown, Pittsburgh
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Permalite Processed by: Perlite Manufacturing Co., Carnegie, Penna.

Permalite

the largest selling perlite aggregate in the world

SCHLAGE HEAVY-DUTY SECURITY



trouble-free lock performance under the heavy traffic conditions found in commercial and institutional buildings. The following features are typical of the many plus values received when you specify Schlage:

A unique vinyl "friction ring" prevents loosening of inside rose and maintains rigidity of installation.

Heavy-gauge spindles are held in position by long bearings for perfect alignment.

A heavy cast brass slide guarantees balanced knob action with smooth, efficient retraction of the latch.

Mechanisms are available in your choice of several materials to meet the atmospheric conditions of each particular installation . . . in bronze and monel, stainless steel, or zine-plated and dichromated steel.

designed by the leaders in lock science...



CUPRA design



MERCURY design



TULIP design



HANOVER design

Illustrated above are a few of the many Schlage heavy-duty lock designs available. From Schlage's complete line of heavy-duty locks, there's a Schlage lock design to meet the specialized requirements of the most discriminating architect.

For the latest information on Schlage heavy-duty locks, contact your Schlage representative or write to Dept. A-3.

SCHLAGE

SCHLAGE LOCK COMPANY, SAN FRANCISCO · NEW YORK · VANCOUVER, B. C. · Address all correspondence to San Francisco



West Coast Hemlock

Architects and builders look for the Weyerhaeuser 4-Square brand name on Hemlock for several reasons. First, this famous trademark means that the wood has been carefully and scientifically seasoned. Kiln-drying assures greater stability, long life, and excellent finishing characteristics. Whether it is siding, framing, sheathing, flooring, or paneling, the 4-Square brand name on Hemlock means that this lumber has been manufactured with precision, accurately graded, and carefully handled and shipped.

As finish lumber, Hemlock is a beautiful, light-colored, straight-grained wood—easy to work, and relatively free from pitch pockets. These qualities make it an excellent species for both paneling and molding.

The structural advantages, beauty, and versa-

tility of Weyerhaeuser 4-Square West Coast Hemlock Lumber explain its growing popularity among architects and builders. See this beautiful "Ability Wood" at the yard of your Weyerhaeuser 4-Square Lumber Dealer.

Weyerhaeuser Sales Company

4-5QUARE

This is a Buensod Dual-Dua air. mixing unit. More than twethousand like it have been installed to provide ultra-flexible air conditioning in New York's Rockefeller Center. Many thou-tands have been installed else-where. But the important news

QUAL-DUCT

ALUMINUM

-inside and out. It's a Buensod first. Only Buensod makes aluminum air mixing units. Light. Corrosion-resistant. The obvious choice for your next project. Contact us or our representative nearest you.



BUENSOD-STACEY, Inc.

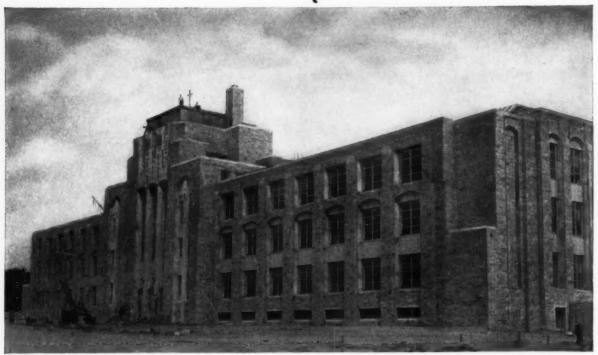
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Some day a "hallowed hall"! This is the basis for the design of the new Liberal Arts Building at St. John's University, Queens County, N. Y. Seen here in the final construction phase, the tower is planned for beauty, for permanence, for

minimum maintenance. It's roofed with "life-of-the-building" Monel. Architect: Henry V. Murphy, Brooklyn. General contractor: Veit & Company, Inc., Flushing, N.Y. Monel sheet metal work: John Schneider Roofing Contractors, Inc., Brooklyn.

University tops off fine building with a Monel Roof

These workmen are capping St. John's University's new Liberal Arts tower with Monel* nickel-copper alloy... Monel batten seam roofing, Monel sheathing, Monel through-wall flashing.

As an architect, you know university administrators want permanence as well as beauty in their buildings.



Going on to stay. It will probably be years before this new Monel batteri seam roof needs attention. It may never need it. All sheathing and through-wall flashings are Monel, too.

They want endowment funds spent for education rather than building maintenance.

To meet these requirements, as far as roofing is concerned, the architect for St. John's specified Monel Roofing Sheet.

A good move for any architect . . .

Monel Roofing Sheet is "life-of-thebuilding" roofing. Easy to cut, form and install with standard tools. Beautiful. Practically no maintenance needed.

Monel alloy can't rust. Doesn't corrode from airborne chemicals. Never needs paint. It's strong. Tough. Wear resistant. It doesn't buckle or crack because of quick temperature changes.

Monel nickel-copper alloy resists strain, too. Better than other nonferrous materials. Won't creep on vertical surfaces. Won't crack when bent double.

Suits many buildings

People say that a Monel alloy roof, like an education, is good for life. On government buildings, schools, hospitals, libraries, churches, museums. On factories, laboratories, office buildings, railroad stations, hotels. Even homes.

Look into Monel roofing for your next job. Send today for "One Metal Roof." Booklet pictures typical Monelroofed buildings, gives service records, discusses installation methods. For help on specific jobs, simply get in touch with us.

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The International Nickel Company, Inc.
67 Wall Street New York 5, N. Y.

Mickel Alloys

Monel Roofing ... for the life of the building



For real dishwashing efficiency and thorough sanitation, either the water pattern or the dishes must move. Hobart adheres strictly to this sound, proven washing and rinsing principle. In the flight-type, both the water pattern and the dishes move. You can see the complete coverage of the wash action (above). What you don't see is the continuous racking system that conveys the dishes through the scrapping, power wash, power rinsing, final rinsing, draining and drying phases. The jet-powered wash pattern reaches every part of every dish racked in perfectly inclined position by the special stainless steel (nylontipped) flight links. Hobart builds the only continuous racking dishwasher with all-stainless steel conveyors. (A less expensive conveyor with nylon flight links is available.)

In kitchens where speed and capacity are demanded the flight-type is ideal. Sizes range from 12 to 26 feet long. Conveyor speeds from 5 to 12 feet per minute. Where volume varies, one of 50 other Hobart semiautomatic or dual-drive conveyor models will be exactly right. The smallest is two feet square. Each is designed for maximum volume in a minimum space and with minimum supervision.

Model FT-26

As an architect, you'll readily appreciate the performance and dependability that are synonymous with the Hobart name. You'll appreciate, too, the complete flexibility of choice offered by the complete Hobart line. Check Sweet's Architectural File for complete specifications on all Hobart kitchen and dishwashing machines or send in the coupon.

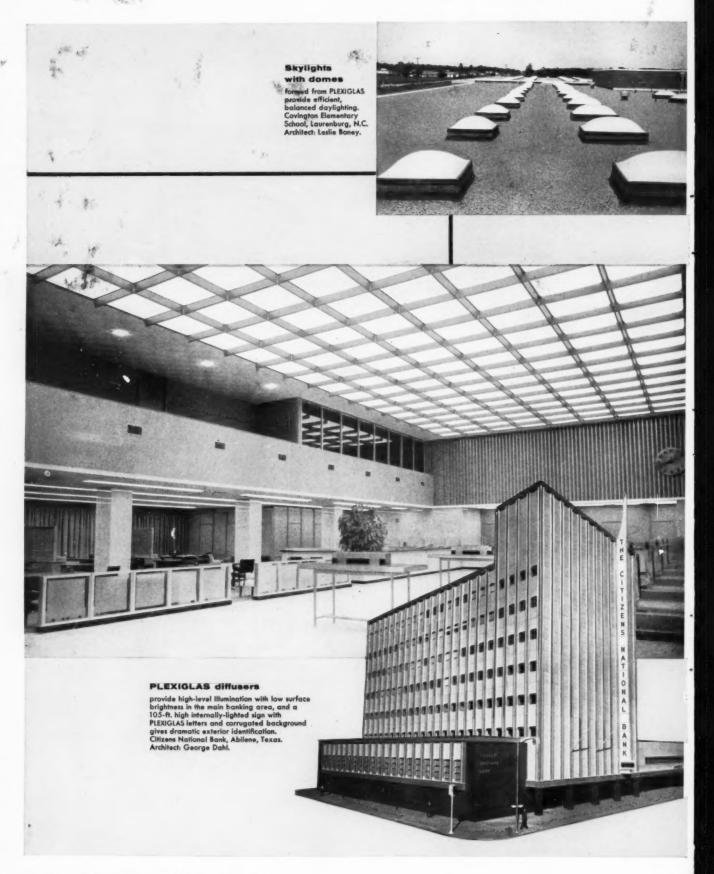


Hobart

machines

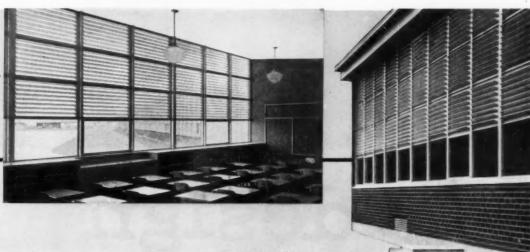
The World's Largest Manufacturer of Food, Kitchen and Dishwashing Machines.

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| The Hobart Manufacturing Co., Dept. HAR, Troy, Ohio |
| Please send information and specifications on Hobart continuous racking dishwashers . On semi-automatic or dual-drive automatic dishwashers . On kitchen machines . |
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Daylight Louver Panels

formed from PLEXIGLAS, for light transmission, daylight control, and weather closure in one continuous surface. McKinley School, Boise, Idaho. Architech Anton E. Dropping.



PLEXIGLAS

The Architectural Plastic

... for lighting ... signs ... skylights ... daylight-control glazing

It is the outstanding combination of properties obtained with Plexiglas® acrylic plastic that accounts for the specification of this material for so many light-transmitting applications. Plexiglas is—

Formable economically into domes, pans, spandrels, louvered panels, letters, sign faces, and corrugated sections.

Resistant to age, weather, sun and corrosion.

Strong, yet light in weight.

Efficient in the transmission and diffusion of light.

Clear, in transparent form, as optical glass.

The coupon below will bring you color samples and the names of sources of supply for building products and signs that incorporate Plexiclas.



Chemicals for Industry

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

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Conadian Distributor: Crystal Glass & Plastics, Ltd., 130 Queen's Quay at Jarvis Street, Toronto, Ontario, Canada.

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Please send PLEXIGLAS color samples and the names of suppliers of:

- Lighting equipment
 Daylight Louver Panels
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Signs and letters

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(P7-5)



color

GREEN PASTEL, RED PASTEL, LINDENWOLD, ANTIQUE RED, PEACOCK BLUE, RUSTIC BROWN

design

ATTRACTIVE, VARIABLE, STRAIGHT-LINE TEXTURE

long life

MADE OF ASBESTOS FIBER AND PORTLAND CEMENT...THEY CANNOT BURN, AND ACTUALLY GROW HARDER WITH AGE

self-aligning

QUICKLY AND INEXPENSIVELY LAID WITH EITHER STRAIGHT OR THATCHED BUTT SHOWING



K&M "DUALAY" ASBESTOS ROOFING SHINGLES

Check SWEET'S ARCHITECTURAL FILE for details or write to us. Information also available on K&M Siding Shingles.



KEASBEY & MATTISON
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STILEMAKER OORWARE

 ${f T}$ his heavy-duty cylindrical lock line has earned a schoolwide reputation for being rough-resistant...a point to consider when specifying doorware for any type of institutional or commercial building.

A close check of Stilemaker construction will reveal the advantages of such features as ... a full %" throw permanently lubricated latch bolt; concealed knob retainers; long knob shank bearing for knob rigidity and many others. All the facts are available in concise form. Consult your Russwin Specialist or write Russell & Erwin Division, The American Hardware Corporation, New Britain, Conn.



as well as attractively-Styled



ERA DESIGN







FLARE DESIGN in cast brass, bronze or alumin COSMIC* DESIGN in wrought brass, bronze or aluminum



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MONO DESIGN

*Can be furnished in stainless steel

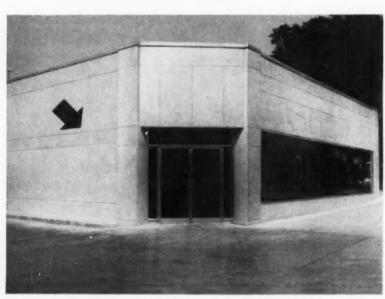


Modernizing in stucco?

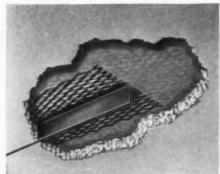
low-cost expansion joint helps do the job 3 ways better



Here's a building being prepared for the application of exterior stucco. At this stage, Penmetal Expansion Joint (see arrow) had been applied to left side only.



Finished remodelling job. Arrow points to Expansion Joint in stucco. Decoratively patterned, this aperture breaks the flat wall expanse, enhances the appearance of the building.



LONGER LASTING

Stucco jobs keep their new look longer when the Penmetal Expansion Joint is applied for anticrack protection. A specially designed ground expands and contracts with any movement of stucco. This absorbs internal stresses and strains – greatly reduces the threat of cracking.

GREATER ECONOMY

Long-run savings on maintenance justify ten times over the small initial cost of a Penmetal Expansion Joint. What's more, the joint provides a work stop—no improvising, no special-order items. Saves time and labor, too; it's a one-piece joint and ground.

BETTER LOOKING

Many architects use the Expansion Joint to enhance the appearance of buildings. They have placed it in squares, rectangles, etc., to break the monotony of drab, flat, building sides. In this way, beauty plus crack resistance is achieved.

Planning to modernize in stucco? Then plan to take advantage of the many benefits of Penmetal's expansion joint. Also used for plastered walls and ceilings. Ask for details.

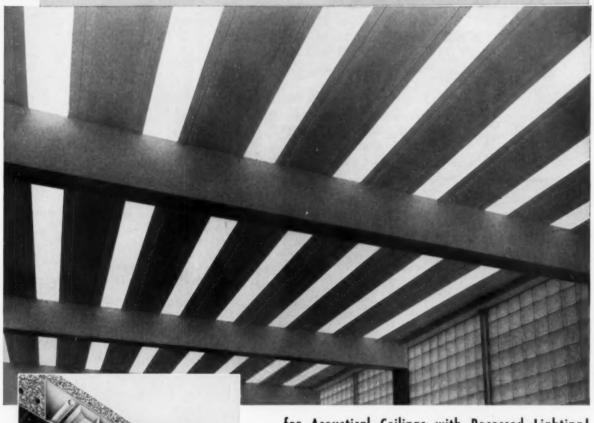
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ACOUSTICAL and TROFFER FORMS

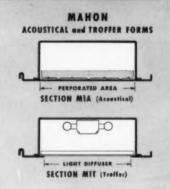


... for Acoustical Ceilings with Recessed Lighting!

Mahon Acoustical and Troffer Forms provide an effective acoustical ceiling and recessed lighting as well as serving as the permanent forms for concrete joist and slab construction of floors and roofs. These are long span units which are integrated with and supported by conventional concrete beams at each end. Only a minimum of temporary shoring is required at mid-span during pouring and curing of concrete. This is permanent, fireproof construction which has a broad application in modern buildings . . . it is used extensively for auditoriums, school classrooms, and in other rooms where an acoustical ceiling with recessed lighting is desirable. Mahon Troffer Sections are also available for use with Mahon M-Deck Sections to provide a combined roof and acoustical ceiling with recessed lighting. In this arrangement the long span M-Deck serves as the structural unit, the interior finish material and the acoustical treatment—all in one package. Purlins are eliminated . . . M-Deck Sections span from wall-to-wall or from truss-to-truss. Some of these Mahon Forms and Structural Sections do not appear in the current Sweet's Files. Why not have a Mahon sales engineer call and bring you up to date on Mahon products now available for Floor, Roof and Ceiling Construction?

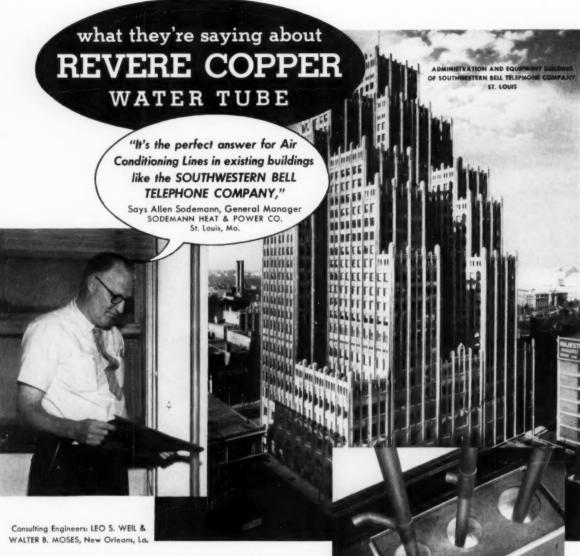
THE R. C. MAHON COMPANY • Detroit 34, Michigan Sales-Engineering Office in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Acoustical and Troffer Ceiling Forms; Steel Roof Deck and Long Span Acoustica M-Decks; Electrified M-Floors; Insulated Metal Curtain Wall; Rolling Steel Doors, Grilles, and Underwriters' Labeled Automatic Rolling Steel Fire Doors and Fire Shutters; and Underwriters' Rated Fire Walls.



Above is the Celling of the Auditorium in the Eugenia Methetol School, Detroit, Michigon. It is one of 50 rooms with Mohon Acoustical-Traffer Ceilings. Shreve, Walker & Associates, Inc. Architects. Alfred A. Smith, Inc., Gen. Contractors.

MAHON



"From the first time we looked over the 31-story Southwestern Bell Telephone Administration Building, we just never gave any other material a second thought... copper tube was it. The job had to last... and what's more enduring than non-rusting copper? The installation had to be made as fast as possible and with the minimum of rip-up. With the long lengths of copper tube and solder fittings requiring no wrench room or thread cutting, copper again was the answer."

It is these same attributes that make Revere Copper Water Tube the first choice of contractors, architects and engineers for radiant panel heating, hot and cold water lines, processing lines, underground service lines, drain, waste and vent lines. See your Revere Distributor for your needs.

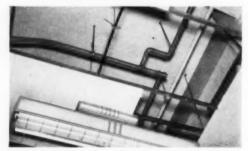
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ONE OF THE 1,101 SETS of risers around the perimeter of the building. Using solder fittings with silver alloy brazing made installation speedy, safe, sure.



REVERE COPPER WATER TUBE is made to order for small spaces like those encountered in this false ceiling. No wrenchroom needed when you use Revere Copper Water Tube. The 45,000 lbs. of Type "L" Revere Copper Water Tube used were supplied by GRINNELL COMPANY, Revere Dist.



The Best Casement Windows have Getty Casement Operators

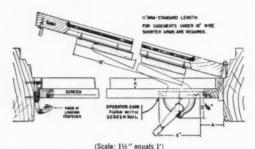
Here the facts speak for themselves: today Getty Operators are used on more casement windows than all other makes combined.

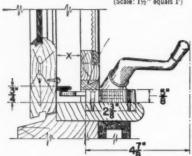
Getty Casement Operators have a record for long, trouble-free performance in every type of building: commercial, institutional, residential. Don't take chances with lesser known brands. Whenever your plans call for casement windows, specify Getty Operators to make sure you get the best.

For Wood Casements



No. 4703W Specially recommended for medium or large size casements, or where fine hardware is preferred. Features exclusive Getty Internal Gear drive for greater power and longer life.





Installation of 4703W with use of a screen seat. Operator may also be installed with screen rail notched out to fit over operator housing. Data for installation of righthand operator 4703W on screened wood casement equipped with butt hinges—

DIMENSION A Minimum 234" with butt hinges. Minimum 4" with

hinges. Minimum 4" with extension hinges.

DIMENSION X

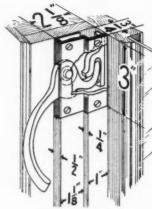
Minimum 1" with butt or extension hinges Maximum 4" with butt hinges. Maximum 2\%" with extension hinges.

NOTE. X must be 1" when Locking Fastener 4608W is used.

LOCKING FASTENER 4608W



Locking Fastener 4608W is especially designed for use with screened wood casement windows, in combination with Operator 4703W. If a straight handle is preferred, order 4608W-2. Locks and unlocks the window without disturbing the screen. Made of solid bronze or brass, in polished or dull finish. Also available in standard lacquered and plated finishes.



INSTALLATION

NOTE. Screen stop details must conform to dimensions shown.

Screen stop must be cut away 3" to accommodate housing of locking fastener.

Dimensions shown are applicable to installation of Locking Fastener 4608W with Operator 4703W.

Also available, No. 4715 which may be used in place of the 4703W. This is a low-cost, angle-drive operator ideal for new installations, or for casements now operated by stay bars or other obsolete hardware. Neat in appearance—easy to install.



H. S. GETTY & CO., Inc.

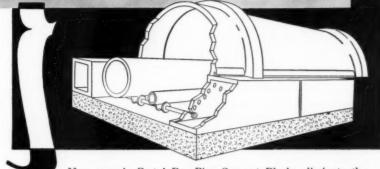
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PERMANENT PROTECTION

for underground piping!

STILLWATER
CERT-A-BAR*
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CONDUIT
SYSTEM



New ceramic Cert-A-Bar Pipe Support Blocks eliminate the need for interior cast iron rests. The perforated block is laid as a structural support member at regular intervals, and the bars are simply inserted and locked in place.

The vital consideration in selecting an underground conduit system is permanent protection . . . not for one year or five, but for the life of the piping. You get the best possible protection for your underground metal service piping with a Stillwater Conduit System of vitrified clay. It's chemically inert—can't rust, rot, corrode, or decay . . . ever. And it is manufactured in accordance with ASTM specification C-13-54, assuring proper strength and quality. Any combination of service piping can be protected. Conduit is available in a wide range of sizes, with a complete line of fittings and accessories, including alignment guides, lateral guides, and anchors. Any contractor's crew can handle the installation easily, or if you prefer, Stillwater Licensed Installers will assume the responsibility. The Cert-A-Bar Tunnel System can be installed with any of three suggested new waterproofing specifications—one for average conditions, one for intermittent ground water conditions, and a third for high water table conditions. It's the lowest-cost conduit per year of service that you can specify or install!



WRITE FOR

illustrated, four-page circular with complete installation specifications.

*T.M. Reg. App. For. Patents Pending

The Stillwater Clay Products Co. STILLWATER CONDUIT DIVISION

3334 PROSPECT AVENUE, CLEVELAND 15, OHIO

WAITE TOK

THE CERT-A-BAR SYSTEM HAS ALL THESE IMPORTANT ADVANTAGES

- Inherent structural strength for permanent protection
- Complete flexibility for design
- Minimum initial and long-term costs
- Quickly installed
- · Keeps pipe insulation dry
- No electrolytic corrosion of piping
- No maintenance required

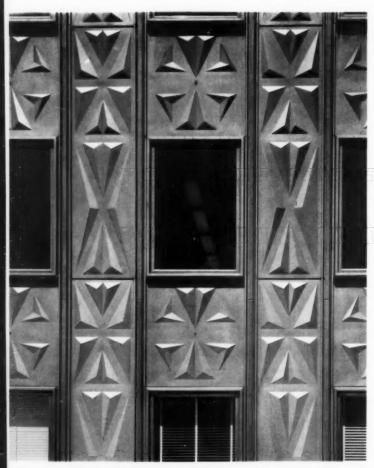
A few of the hundreds of possible combinations of piping for the Cert-A-Bar Tunnel System are shown at left.



SW-916-70A

Stainless Steel assures permanent beauty

for world's biggest metal office building



Stamped design adds rigidity to the Stainless Steel panels, and contributes to their striking appearance.

OWNER: Galbreath Corp., John W. Galbreath and Peter B. Ruffin
ASSOCIATED ARCHITECTS: Harrison & Abramovitz and John B. Peterkin
GENERAL CONTRACTOR: Turner Construction Company
PANEL FABRICATOR: Commercial Shearing & Stamping Co., Youngstown, Ohio

The new Socony Mobil Building in New York City is well known for being the world's biggest metal office building. It's equally famous for being the largest air-conditioned commercial structure. But one of the most architecturally important features about this building is the fact that it is completely sheathed in Stainless Steel.

Stainless Steel is the closest thing to a perfect building material that man has ever devised:

It's strong

Thin sections can be used.

It resists corrosion

No other commercial metal can match it.

It has a high melting point

Meets fire requirements inside and outside.

It requires no maintenance

But it's easy to clean for appearance's sake.

It lasts

Can be relied on for the entire projected life of the building.

United States Steel has worked closely with Stainless Steel curtain-wall panel fabricators. We'll be glad to give you more information, or put you in touch with these fabricators. Write United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

Wall thickness was reduced from normal 10 inches to less than six inches. Reduction would have been greater except for building code which required four inches of cinder block backing. Entire USS Structural Steel framework fabricated and erected by American Bridge Division, United States Steel.

USS STEELS FOR ARCHITECTURAL DESIGN

USS Stainless Steel • USS Vitrenamel Sheets USS Structural Steel • USS Window Sections

UNITED STATES STEEL





of social life in the Nation's Capital: the mammath Grand Baliroom, Sheraton-Park Hotel,



is the center of the architectural design

Properly treated and maintained, the floor complements and enhances the beauty of the interior design. But - without proper treatment, the same floor can destroy the unity of the design, disrupt the architectural

This beautiful maple floor bordered by white marble, was brought to its present brilliance and serviceability by an all-Hillyard treat-ment program, applied under active supervision of the local Hillyard "Maintaineer"®

Write Hillyard for Architect's Specifications covering treatment of floors of all types wood, terrazzo, resilient tile, gymnasium, marble, concrete - and for Contractor's Long Specifications, covering step-by-step procedures of treatment.

Depend on your local Hillyard Maintaineer - as an expert consultant on floor treatment specifications, problems and procedures - as your "Job Captain" during initial floor treatment in new buildings.



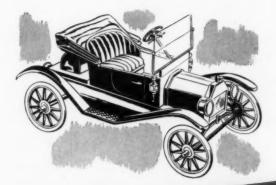




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write Hillyard ST. JOSEPH, MO.



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AS OUTMODED
AS A MODEL"T"?

BLAKESLEE

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no gears to shift!

If you're still stopping your mixer to shift gears—you're using outmoded equipment.
BLAKESLEE VARIABLE SPEED MIXERS give you any desired speed—not just three or four—without stopping the motor or mixing action. This assures smoother, more even mixing and reduces wear and tear on moving parts...Investigate today the many advantages you get with a Blakeslee. Write for special literature and facts.



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FOR THE BEST BUY BLAKESLEE G. S. BLAKESLEE & CO. 1844 SO. LARAMIE AVE. CHICAGO 50, ILLINOIS

NEW YORK . LOS ANGELES . TORONTO

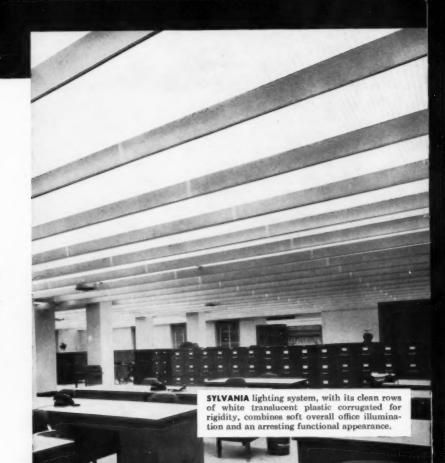
SYLVANIA wall-to-wall lighting illuminates over 93,000 square feet of floor space in the new general office building of West Penn Power Company at Cabin Hill, Greensburg, Pa.

Here's a new approach:

Use wall-to-wall lighting



SYLVANIA Sylvan-Aire lighting system—shown here with optional V-shaped "sono-wedge" feature—offers sight and sound control in corridors as well as offices.





Sylvan-Aire lighting system: strip fixtures go in first.



Support channels, "sono-wedges" are hung from fixtures



Corrugated white plastic is unrolled into



System will fit cleanly around air-conditioner diffusers, loudspeakers, etc.



Covers piping, wiring, yet leaves them easily accessible



Completed Installation gives attractive functional lighting at no extra cost.

for all offices and corridors

Sylvan-Aire lighting system by Sylvania is used in striking treatment at new Cabin Hill, Greensburg, Pa., offices of West Penn Power Company

West Penn Power Company uses Sylvan-Aire wall-to-wall lighting to illuminate over 95% of the working area in its own new general office building at Cabin Hill, Greensburg, Pennsylvania.

A choice like this—by a major power company—marks a milestone in the development of modern lighting.

In planning their offices, West Penn Power management sought optimum working conditions for 600 executive and staff personnel. They located in an uncrowded area, away from big-city confusion, in the heart of their customer service area. They made a basic decision: that lighting is the environmental factor which most effects personnel, is most noticed by power company customers.

Architects Hoffman & Crumpton, Pittsburgh, together with consulting electrical engineers Carl J. Long Associates, specified wall-to-wall lighting for over 93,000 square feet of ceiling area. Included were all types of workrooms—general and private offices, corridors, and drafting rooms. Then electrical contractors Howard P. Foley Company selected Sylvan-Aire, Sylvania's wall-to-wall lighting system. With it they could meet all specs, bid low, then go on to effect untold savings in labor with Sylvania's time-saving tool-free hanging methods.

Sylvan-Aire by Sylvania brings West Penn Power a new and different office lighting. It maintains needed high footcandle levels with an overall light that is soft and diffused in quality. It creates a shadowfree, glare-free effect on desks and working surfaces. Its clean functional design presents a pleasing efficient appearance, helps promote good relations with employees and visitors alike.

More important—management saves on construction. They get equivalent of lighting and ceiling for cost of lighting system alone. They save on maintenance, too, because Sylvan-Aire is designed for ease of cleaning and lamp changing.

The Sylvania Fixture Specialist in your area is ready to talk over your individual lighting problems, and the latest developments in lighting systems—at your request. Give him a call. Or if you prefer, write direct for your FREE copy of our complete new data book on "The Modern Method of Wall-To-Wall Illumination and Sound-Conditioning."

SYLVANIA ELECTRIC PRODUCTS INC. Lighting Systems, Dept. C20 One 48th Street, Wheeling, W. Va.

SYLVANIA

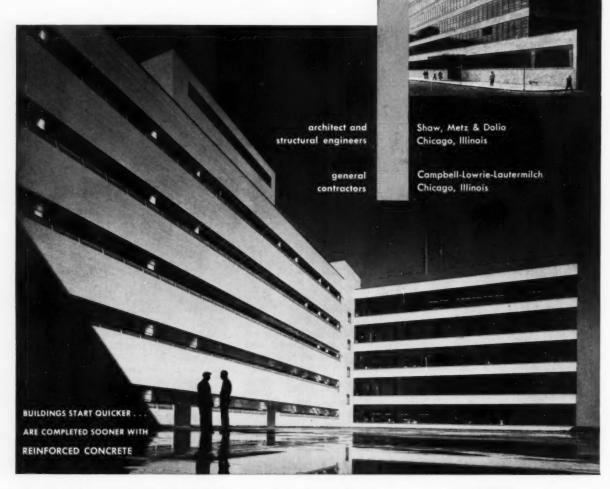
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REINFORCED CONCRETE

lowers costs

for the new Florsheim Shoe Company factory and headquarters in Chicago



Lower over-all costs and design flexibility were the major factors which influenced architects Shaw, Metz & Dolio in their selection of reinforced concrete for the imposing new Florsheim Shoe Company factory and headquarters offices in downtown Chicago.

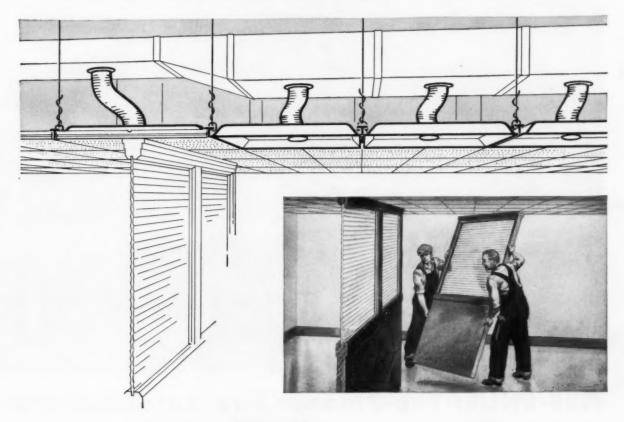
On many other important industrial projects and buildings from coast to coast, reinforced concrete is also providing better structures for less money. It is a flexible medium, inherently firesafe, and highly resistant to wind, shock, and quake. Furthermore, reinforced concrete buildings start quicker... are completed sooner because all necessary materials and labor are readily available from local sources. On your next job, design for beauty plus economy... design for reinforced concrete.



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eliminates air conditioning problems when relocating partitions...



multi-vent

LOW VELOCITY AIR DIFFUSERS

For architects and engineers designing air conditioned modular office space, Multi-Vent solves a troublesome problem. Multi-Vent air diffusing panels, once installed flush in the ceiling, need not be moved, altered in any way, or even adjusted when partitions are moved to suit tenants' changing needs.

Since Multi-Vent introduces conditioned air

through the perforations in standard acoustical ceiling pans at low velocity, and since the air is gently diffused downward into the room, there is no "throw" or "blow" to bounce off nearby partitions. It is for this reason that a partition may actually bisect a Multi-Vent panel without affecting comfort conditions in the surrounding area.

Write for detailed literature and name of representative in your area.

multi-vent division of THE PYLE-NATIONAL COMPANY

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FIRE-SNUF: The Pioneer Fire Retardant Panel

Fire-Snuf daylighting areas enhance buildings across the nation — schools, institutions, public buildings, shops and factories. Everywhere architects, assured by Underwriters' Laboratories ratings and Factory Mutual approval, are specifying and making full use of this quality panel that lets in so much daylight for so little installation cost and maintenance.

The reports of Underwriters' Laboratories and Factory Mutual are available to you upon request. Your Sweet's File reference is $\frac{7d}{Re}$.

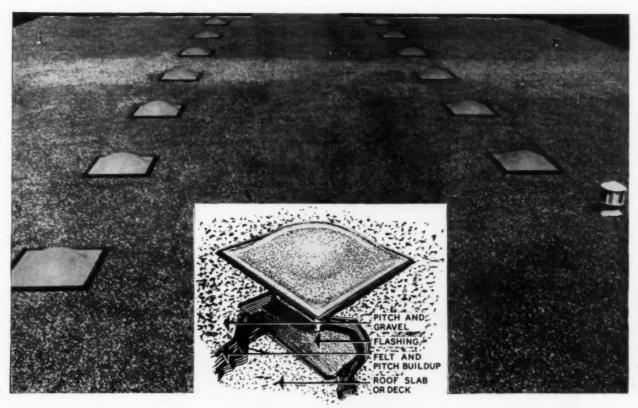


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Resolite Fiberglass Products



CONSOLITE... the Double Dome Skylights

CONSOLITE the first really trouble-free skylight for flat or sloped built-up roofs—is molded of fiberglass into one-piece, leak-proof, self-flashing construction. Its double dome insulates against both heat and condensation.

Consolite's three basic models—self flashing, curb-mounting and bond types—are designed to suit any built-up, prestressed or bonded roof in general use. They are available in rectangles, squares and rounds.

Architectural products by Resolite also include Resolite standard corrugated panels and glazing flats, in sheets or panes, and the popular new Security Panels, the decorative translucent panels with embedded expanded metal for greater impact strength.

Consolite double dome, self-flashing skylight installation in section.









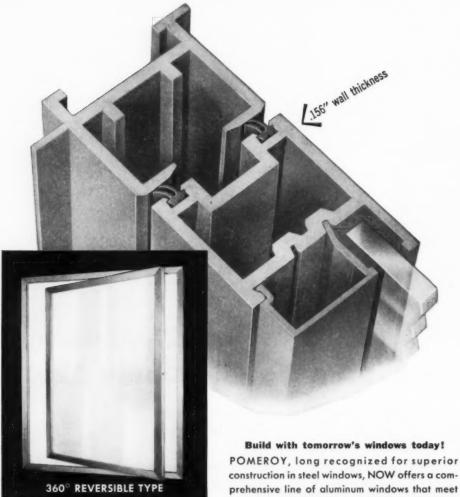






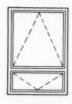


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SINCE POMEROY

construction in steel windows, NOW offers a comprehensive line of aluminum windows that meet the most rigid specifications. Windows that prove their value in every detail-the 360° REVERSIBLE (illustrated), DOUBLE-HUNG, HINGED and FIXED types to compliment modern buildings designed for maximum efficiency and easy maintenance.



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SPANDRELS SYSTEMS

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Walls "get it"... from people
people carrying unwieldy objects
people who wait and lean, rub, scuff and doodle
people passing, crowding, pushing day in and day out.
Be sure walls can "take it" all ways... specify
L. E. Carpenter's new tough surface wall covering...

dado-wall

VICRTEX V.E.F.* FABRICS



Yes, walls really get it in schools, office buildings, hospitals, public buildings, institutions . . . wherever there are large concentrations of people.

But, walls can take it when protected with new tough surface, heavy-duty VEF DADO-WALL—made of durable vinyl electronically fused in depth on a strong woven fabric to form a smooth, almost impregnable, covering.

VEF DADO-WALL resists abrasion, scuffs, digs—won't peel, crack or chip. L. E. Carpenter's famous VEF technique and extra-deep vinyl surface have produced a wall covering that can pass the most severe scuff and wear tests. Like all VEF fabrics, DADO-WALL is mildew and sound resistant... will NEVER shrink-at-the-seams, NEVER fade or discolor.

The handsome two-toned effects and solid colors are comfortable . . . have been selected to meet color therapy standards!

In design . . . performance . . . maintenance, L. E. Carpenter's new tough surface heavy-duty VEF DADO-WALL can take it all ways!

Write TODAY for samples and prices.

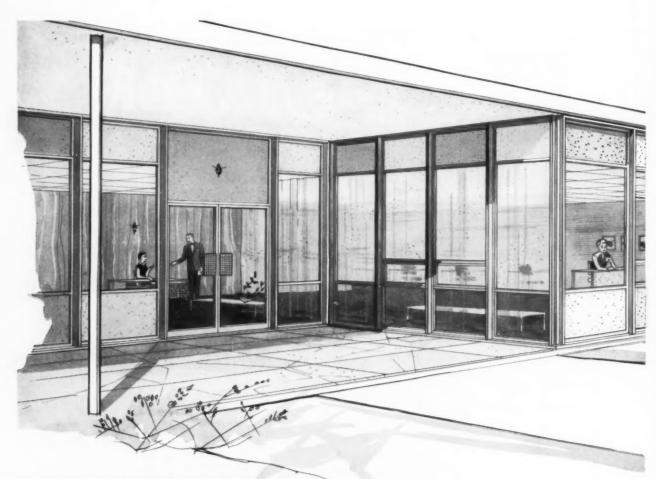
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another



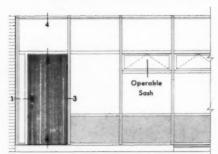
ORIGINAL



Kawneer unit wall

FEATURES MODULAR COMPONENTS...

Modular components are a creative building tool for the architect.



Typical Kawneer Unit Wall Application

Versatility is built into this standardized exterior wall system by Kawneer. Wall modules are available in a range of heights and widths . . . fixed or operating sash can be provided . . . insulated panels can be finished in a choice of colored porcelain enamel or natural aluminum . . . a complete variety of flush or glazed doors are available and in a range of sizes. Whatever your needs, you'll find this flexible new wall system a truly creative and effective building tool.



Kawneer welded doors ... a "custom" touch at standard prices

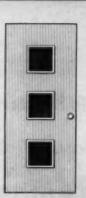
The contemporary appearance of unit wall calls for a door that will enhance these installations without requiring an excessive investment in custom design and construction. The new Kawneer Welded Door meets these demands since it is produced under

rigid production standards and held for "off-theshelf" delivery. Its slim-line styling plus four interchangeable, stock push-pull hardware styles give it the "custom-tailored" look at standard door prices.



Triple-strength flush doors feature honeycomb core

Kawneer's flush doors can add a high degree of distinction to your unit wall applications. Standard door surface is a subtle ribbed aluminum...special surfaces in colored vinyl plastic can be provided. Exceptional strength of honeycomb core construction make it ideal for use in heavy traffic areas.

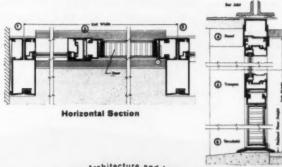


USES STANDARD KAWNEER DOOR UNITS

Modular standardized design assures economy and consistent high quality.

Standardization of all unit wall components provides high quality wall panels produced by the most modern assembly line production methods. These methods allow Kawneer to "build-in" the finest weathering features . . . features that give exceptional water resistance to Kawneer Unit Wall and practically eliminate air infiltration. The economies of mass production tooling, purchasing and assembly are also passed on to you . . . savings you can't afford to pass up. These modern methods are a guarantee that you will receive the product you specified . . . a product consistent in design, quality and workmanship.

For more detailed information on Kawneer Unit Wall and Kawneer Standard Door Units, write or call



Kawneer

since 1906



Radiant Hot Water Heat

HERE'S A beautiful home that introduces many new ideas in gracious living. Being a multi-level home, it is naturally heated with hot water. Both radiant coils in the floor and radiant base-boards are used. The broad expanse of windows makes the front of the house practically out-of-doors so baseboard radiation is added. There are four zones each controlled by a Thrush Radiant Heat Control, a Thrush Circulator and Thrush Flow Control Valve. Zoning is simple and inexpensive by this method, yet desired temperatures are maintained in each part of the home automatically.

With Thrush System, it's just like living in a mild climate all winter long no matter what the weather outside may be. Best of all, installation costs are lower, fuel consumption is reduced and maintenance is negligible.

See our catalog in Sweet's or write Dept. J-3 for booklet and any information you may require in planning home heating.

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HORIZONTAL THRUSH FLOW CONTROL VALVE



FREE BOOKLET ON REQUEST

H. A. THRUSH & COMPANY

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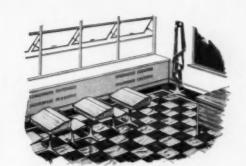


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A child is a whirlwind on two feet moving in a manner that's incalculable...and constant. It takes flooring with stamina...colors with staying power... to measure up to his activities. MATICO qualifies on every count... stands up to heaviest traffic year after year. MATICO colors are styled to camouflage soil, to stay bright and fresh, to clean easily and resist signs of wear. Hindsight proves your foresight, when you specify economical MATICO for important installations.

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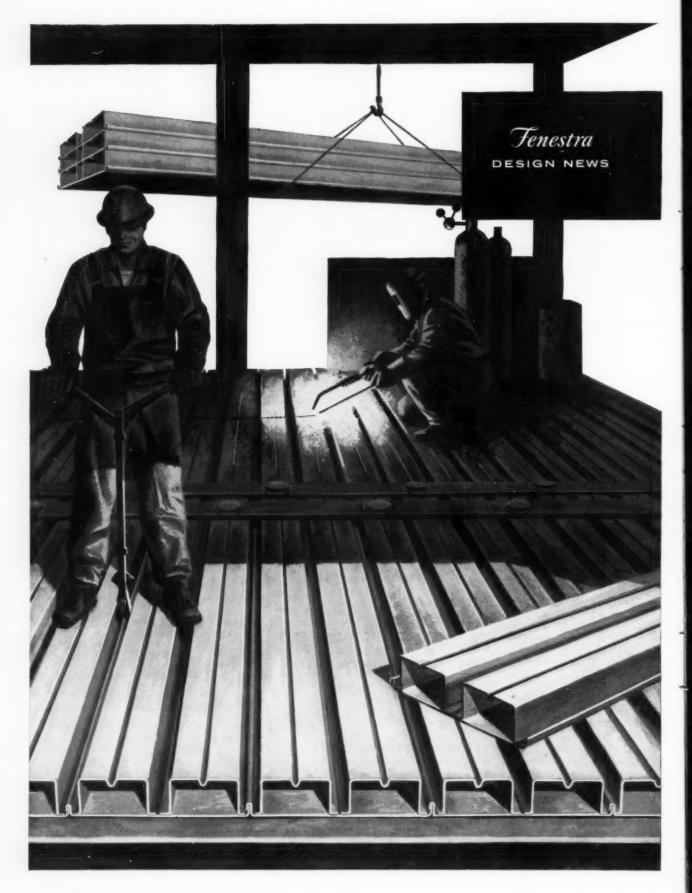






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106



General Telephone Company, Santa Monica, California. This new 6-story office building uses Fenestra Electrifloor for "built-in" electrical availability and as a lateral diaphrogm to resist earthquake and wind loads. Architects and Engineers — Albert C. Martin and Associates. General Contractor—George A. Fuller Company. Electrical Header Duct—National Electric Products Corporation.

How Fenestra* Electrifloor® gives you a

NEW CONCEPT OF WIND AND SEISMIC DESIGN

New design and construction methods with Fenestra Building Panels improve lateral stability and provide 100% electrical availability.

Today's trend to tall, slim office buildings challenges the structural and electrical designer with new problems of lateral bracing and electrical distribution. Fenestra Electrifloor Building Panels give you a unique solution for both requirements.

Fenestra Building Panels, with flat-plate design in all depths, make it possible to utilize the cellular steel floor system as a lateral diaphragm to resist wind and seismic thrusts for any depth of panel. Basic engineering data for this application is based on extensive tests at the California Bethlehem ship-yards in 1950 and approved by the Pacific Coast Building Officials Conference.

Fenestra has just completed 21 new full-scale tests of lateral diaphragm design at Cornell University. These tests provide additional data on several new applications of this design. Also included were tests of new methods of attachment and welding patterns to reduce construction costs. For example, the use of Fenestra's riv-clinching device to replace welding of longitudinal joints. These results are

fully described in our 1957 Building Panel Catalog.

Whether you are designing a building for an earthquake zone where lateral bracing is required by codes or for any part of the country where wind loads are to be carried by the structural steel system, you can provide increased lateral stability at low cost with this Fenestra design technique.

In addition, Fenestra Electrifloor Building Panels give you "built-in" electrical availability! Header ducts on top of the panels convert the large area cells to underfloor raceways for electrical, telephone or other wiring circuits. Outlets may be added or moved any time in every square foot of floor space.

To take full advantage of all the economies of Electrifloor, your building should be designed around it. In most cases these strong, lightweight building products can give you and your client many extra benefits at no extra cost!

The New 1957 Fenestra Building Panel Catalog gives you complete information and data on Electrifloor and other Fenestra Building Panels. Mail the coupon below, today, for your FREE copy or call your Fenestra representative. *Trademark



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Please send me FREE copy of New 1957 Fenestra Catalog including data on wind and seismic design.

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Special moulding and paneling patterns fit the Western Pines for *modern*

While the Western Pines have been traditional in American homes for generations, they need not be handled in the traditional manner. The wide choice of modern patterns available illustrates how completely adaptable these versatile woods can be.

Take a look at these moulding and paneling patterns. Only a small sample of the wide variety offered, they highlight the fact that the Western Pines belong in the most contemporary of settings.

And yet, this variety is only one feature of the Western Pines that makes them fit so easily into today's décor. The same beautiful grains and textures that make them favored for traditional building and decorating purposes—that same beauty lends its own special warmth and charm to modern interiors.

Catalog sheets containing complete specifications for Western Pine moulding and paneling patterns at your request. Write to the Western Pine Association, Dept. 920-U, Yeon Bldg., Portland 4, Oregon.

The Western Pines

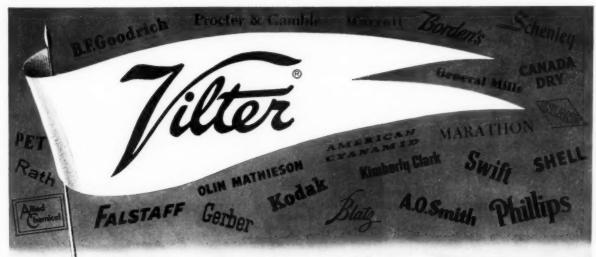
Idaho White Pine Ponderosa Pine Sugar Pine and these woods from the Western Pine mills WHITE FIR - INCENSE CE

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are manufactured to high standards of seasoning, grading, measurement

WESTERN PINE MOULDING PATTERNS WP 302 WP 351 WP 371 WESTERN PINE PANELING PATTERNS WP13 WP 2 WP4 WPIZ

TODAY'S WESTERN PINE TREE FARMING GUARANTEES LUMBER TOMORROW



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"Selling" big business is a real challenge to our ingenuity, craftsmanship, engineering, and research. To sell to companies whose standards are always high demands constant alertness from us to improve our line of refrigeration and air conditioning equipment.

Now, what does this mean to the many users, big or small, of Vilter equipment?

It means sound engineering, equipment designed to do the required job, and more-it means sound metallurgy that provides metals that stand the strains and stresses of daily operation—it means careful workmanship that accepts no departure from rigid standards-it means sound application analysis that fits the product to the job-this is the Vilter code—this is the Vilter standard that has won the respect and business loyalty of thousands of customers the world over.

Dairies, meat packers, breweries, frozen food processors, chemical companies, hotels and many others have found the Vilter trademark synonymous with economical, dependable, year-in, year-out operation.

For a careful appraisal of your air conditioning or refrigeration needs, call on us to give you the analysis of your requirements and our recommendations as to the equipment that will best serve your needs.

> * A large proportion of America's largest industrial corporations are Vilter customers as determined from the FORTUNE Directory of the 500 Largest U.S. Industrial Corporations, July, 1956.



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that lasts ...

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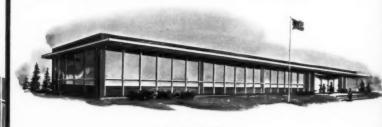
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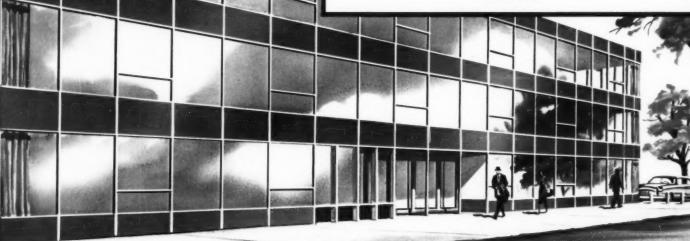
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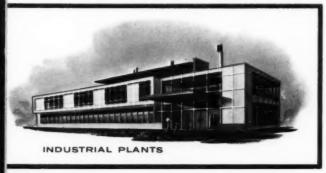


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in sixteen standard colors; plus black and white. Also, non-standard

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A COLOR-FUSED, HEAT-STRENGTHENED
POLISHED PLATE GLASS for curtain walls and
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Practical, Low-Cost Maintenance. The polished glass surface is non-porous, non-absorbing—practically self-cleaning. Offers high resistance to corrosion and weathering.

For colorful buildings of distinctive character, VITROLUX is the answer.

VITROLUX is made of heat-strengthened polished plate glass. Vitreous color, fire-fused to the back surface, becomes an integral part of the glass. The VITROLUX color is sunfast, enduring—offers the same natural resistance to weathering, crazing and checking inherent in quality glass.

Many curtain wall manufacturers offer framing systems into which Vitrolux is installed much the same as glazing with plate glass. Because Vitrolux is heat-strengthened, all edgework, pattern cutting or drilling of holes must be done at the factory before fabrication.

Dimensions—Thickness: $\frac{1}{4}''$ plus $\frac{1}{64}''$ minus $\frac{1}{32}''$. Standard maximum size is 48" x 84". Maximum size for special orders is 60" x 84".

Ask your L·O·F Distributor for descriptive folder (he's listed under "Glass" in phone book yellow pages), or write Libbey·Owens·Ford Glass Company, 608 Madison Avenue, Toledo 3, Ohio.

colors as identified in the Manual; subject to manufacturing limitations

No. 4FE, Silver Gray

No. N, Gunmetal

No. 5LE, Cinnamon

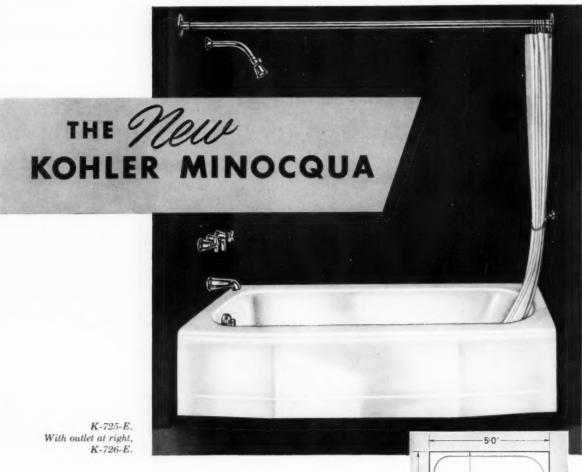
No. 5PO, Chocolate

No. 15LG, Colonial Blue

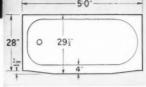
No. 21LI, Jade Green

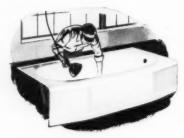
No. 22ML, Charcoal

No. 23GE, Sage Green



Space-saving bench rim bath





First Quality Only

Searching tests and inspections are made throughout every step of manufacture.

The trim, low lines of the Minocqua bath have been given fresh selling appeal with the addition of a 4-inch bench rim.

Space-saving dimensions solve many problems caused by limited space available in today's homes, yet the Minocqua affords the convenience, comfort and safety of the full 5-foot length, slope end, flat bottom.

The sparkling, easy-to-clean enamel of the Minocqua—like that of all Kohler baths—is fused to a base of non-flexing iron, cast for strength and rigidity. The complete line of Kohler baths includes sizes and styles that permit various arrangements in bathrooms of any shape or size.

Kohler Co., Kohler, Wisconsin . Established 1873

KOHLER OF KOHLER

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Pelescoping joints with multiple slots permit infinite adjustability up to 12 inches when other than standard lengths are required. Standard elbows, T's and X's telescope up to 6 inches! cope up to 6 inches

Fast delivery because any length requirement can be met with standard 3, 5, 7, or 10 foot lengths, plus tale. scoping joints



Completely adjustable

after it's hung. For example, if two ends terminate 61/2 inches apart, connection can still be made with a telescoping joint



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Thinnest cross-section available! Tight spots, pipes and structural members present less problems

Easy transposition of phases, using standard telescoping joint parts, for maintaining balanced voltage on

Certified short circuit tests by an independent testing laboratory have proved the superiority of Square D's continuously-supported bus design

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Totally enclosed for safety

at no price premium. No de-rating necessary. Square D's design eliminates need for ventilation

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SQUARE D COMPANY



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Here is a dream come true ... a line of air conditioning outlets by TITUS with beautiful, graceful lines that give unrestricted freedom of design-that fit the new design trend.

Here are outlets that enhance the architect's studied motif .. outlets with charm, PLUS the ability to pinpoint the air stream to a specific area...or diffuse it ... or deflect it ... or turn it ... or blanket a part of a room.

Here are outlets by TITUS with such a wide variety of uses that they accent the overall design, whether placed in the wall, in the ceiling, or in the baseboard.

Specify TITUS air conditioning outlets and know that you can create the air patterns so vital to efficient heating or cooling ... and still preserve the architectural beauty.



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BAYLEY CURTAIN WALL SYSTEMS



After Curtain-Wall is installed.

Before Curtain-Wall is installed.

-incorporating BAYLEY Projected Windows and Decorative Panels

Bayley Curtain Wall Systems—in either aluminum or steel—offer you the maximum economies to be realized from modern curtain-wall construction. Incorporating standard time-proved Bayley Projected Window Units, and a Bayley system of sub-frame assembly, a designer's preference can be met without the costliness of special window designing. Also, as illustrated, installation is reduced to the simplest procedure. Other advantages accruing are:

- Permits a choice of decorative panels and individualized arrangements
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- Provision against condensation annoyance or damage
- A wall with any desired degree of air, light or vision
- Centralized responsibility for the complete wall system including sub-frames, windows and panels

For further information write; or call your local Bayley Representative; or see Sweets.



The Bayley Series A- 450 Aluminum Curtain-Wall Unit.



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2. Bolting jamb plate to load-bearing column.









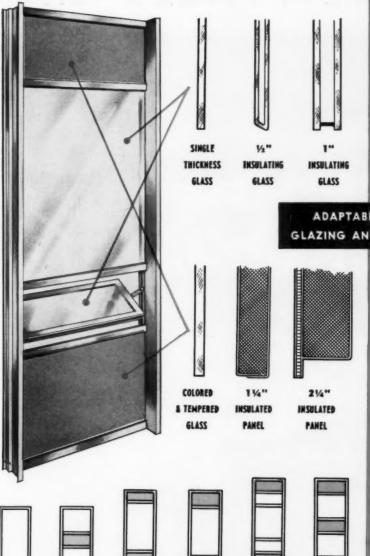


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The Newest Concept of Versatile Window Wall Construction . . . Expertly Engineered for One-Story and Multi-Story Commercial, Industrial, Institutional and Public Buildings.

ADAPTABLE TO ALL TYPES OF GLAZING AND SPANDREL MATERIALS

NOTE THESE FEATURES OF BRASCO WALL

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- . Aluminum wall units are fully coordinated with Brasco Store Front and Extrance Construction.

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Store Fronts in Aluminum and Stainless—Aluminum Entrances Color Enameled Facing—BRASCO WALL—Mouldings and Trim

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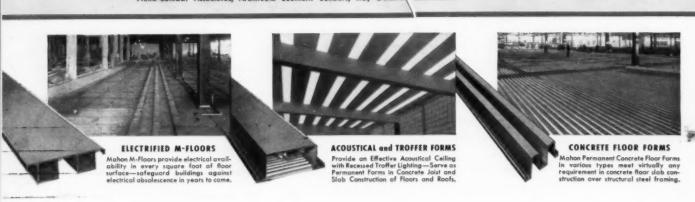
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Modern Office Building for The Kansas City Southern Ry. Co., Shreverort, Louisiana. Neild-Somdal Associates, Architects. Southern Builders, Inc., General Contractors.

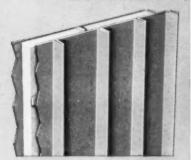


Potential in Modern Architectural Treatment

... provide Low-Cost Permanence and Lasting Beauty!



MAHON FLUTED WALL



MAHON RIBBED WALL



MAHON PREFAB WALL PANELS

In the past sixteen years Mahon Insulated Metal Curtain Walls have been employed extensively by architects in virtually every type of industrial and commercial building . . . the number runs into thousands.

In recent years, progressive architects have employed this versatile product skillfully and to good advantage, costwise, in producing some outstanding exterior design effects in office buildings, schools, nightclubs, armories, sports arenas, technical and research centers, parking garages, and, in some important monumental buildings.

Bright metal—aluminum or stainless steel—in combination with brick, ornamental stone, glass block, or other materials, offers unlimited possibilities in architectural treatment of exterior design. The building at the left is an excellent example.

Mahon Insulated Metal Curtain Walls are light weight, permanent construction . . . thermal properties are superior to those of a conventional masonry wall with furred lath and plaster. Erection is fast under any temperature condition. They are economical, too . . . savings amount to as much as 50% of the cost of masonry walls in some types of buildings.

Mahon Field Constructed Walls and Prefabricated Wall Panels are available in Aluminum, Stainless Steel, or Enamel Coated Cold Rolled Steel in patterns shown at left. In the "Fluted Wall" and the "Ribbed Wall", vertical joints are invisible—symmetry of pattern is uninterrupted across the wall surface . . . and, both of these walls can be erected up to sixty feet in height without a horizontal joint. These two design features, which are vitally important from an appearance standpoint, were engineered into Mahon Insulated Metal Curtain Walls to give you a finer appearing job free from unsightly joints.

You'll want to investigate these Mahon "better look" features before you select a Metal Curtain Wall for your next building.

See Sweet's Files for information, or write for Catalogue W-57.

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Specify Aerofin and you specify high efficiency, long service life and low Take advantage of Aerofin's unequalled experience, maintenance and service costs. production facilities, and materials-testing and design research—of Aerofin's complete engineering service at the plant and in the field.

Ask the Aerofin man.

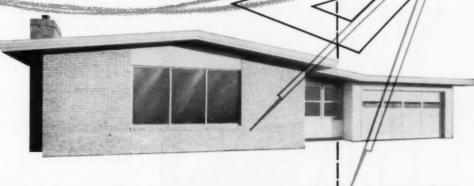
* Aerofin makes extended heat surface exclusively - not as a by-product, not as a side-line. Sold only by manufacturers of fansystem apparatus. List on request.

AEROFIN CORPORATION

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why more architects are specifying

Streamlines copper tube and
fittings for drainage





200-A

In designing a home, you, as an architect, consider every component with great care. That's why we'd like to point out that by specifying Streamline copper tube and solder-type fittings for drainage, you add still greater merit to your most sound architectural design. With Streamline copper tube and fittings, for example, there are no caulked joints to leak . . . no rust to impair the building's beauty and utility. In addition, compact Streamline stacks fit into standard 2" x 4" partitions . . . increasing useable house space and affording greater flexibility of design. The net result is a modern corrosion-resistant drainage system that will last for the life of the building.

It costs a little more, but the extra cost of a drainage system of copper is negligible when you compute its practical advantages.* When Streamline tube and fittings are used, it means a trouble-free future for your client's home.

Remember—the advantage of an all-copper Streamline drainage system far outweighs the small extra cost. Write today for information Kit No. 15 containing the detailed story of using copper for drainage.

MUELLER BRASS CO. PORT HURON 8,

See our catalog in Sweet's Architectural File.

M. Joseph F. Fehrenbach, licensed master plumber of Bridgeport, Michigon, installed the plumbing in the home shown here. He chose Streamline tube and fittings for drainage because it gave him an attractive, troublefree installation for only \$14.23 more than other competitive materials. He was able to do the job much quicker, toe.



MICHIGAN

for high-efficiency air conditioning performance, specify

Preferred Insurance Company, Grand Rapids, Michigan. Skidmore, Owings & Merrill, architects and mechanical engineers, Chicago; Holwerda-Huizinga Co., mechanical contractor, Grand Rapids.



Ceramic tile mural above the sidewalk is heated by a radiant coil to keep the thousands of tiny tiles intact during freezing weather. A weather-compensated thermostat keeps the panel at a constant temperature.

JOHNSON PNEUMATIC CONTROL

No matter how you want to control your air conditioning, you can do it better with pneumatic control. You can provide any combination of operating features you need—central control panels, automatic sequencing, automatic compensation, remote temperature readings and all the others.

Pneumatic flexibility solves the most intricate problems as easily as the simplest. Pneumatic control can be applied to all types of air conditioning and to all makes of equipment. In short, it can meet the exact needs of *any* installation!

Pneumatic control offers other, equally important, advantages. It's far simpler than anything else you can use. It has far fewer components. It has fewer parts subject to failure. It's easier to operate and much easier and less costly to maintain. It functions accurately and reliably with a minimum of supervision — there's nothing to require constant checking and adjusting.

These and other advantages are bringing greater comfort, smoother air conditioning performance and long range operating economies to countless new buildings. The system in the impressive new Preferred Insurance Company Building, shown here, is a good example of what pneumatic control can do for you, too.

Whether your plans involve new construction or a modernizing program, let Johnson, the leader in pneumatic control, give you the full story as it applies to your problems. A nearby Johnson engineer will gladly call at your convenience. Johnson Service Company, Milwaukee 1, Wisconsin. Direct Branch Offices in Principal Cities.

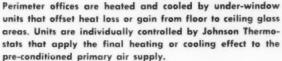
JOHNSON CONTROL

PLANNING

MANUFACTURING

INSTALLING







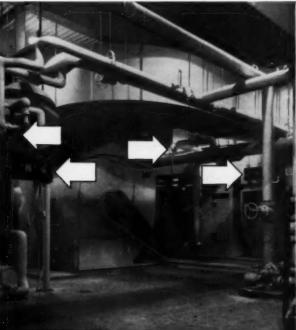
Two large central fan systems supply either cooled or tempered primary air to other sections of the building. Perfectly conditioned air is discharged into each of 29 zones, as directed by strategically located Room Thermostats controlling reheat coils in the system.

Only a Pneumatic System Can Satisfy Modern Control Requirements So Completely and Efficiently, Yet So Simply and Economically

Empty, full or only partially occupied, the dining room is always comfortable. Here, Johnson Thermostats easily compensate for changing occupancy levels. Throughout the building all air conditioning equipment, the refrigeration compressor, the main and domestic hot water converters, the fan coil converter, convectors and exhaust fans are controlled by Johnson pneumatic equipment.

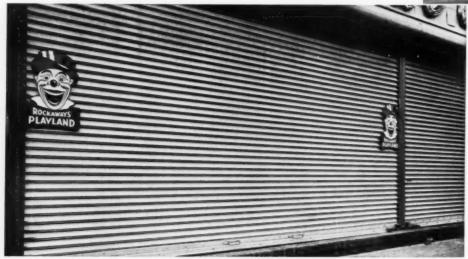
Typical Johnson equipment is shown controlling the central fan units. With pneumatic control, high-efficiency air conditioning performance is accomplished with simpler and fewer components than would otherwise be needed. Inexpensive air control gauges, exclusive with pneumatic systems, provide a system-wide check on performance, adding greatly to operating convenience and efficiency.





Armco ALUMINIZED STEEL Type 2 Offers Durability at Low Cost





New 2-in-1 metal, aluminum-coated steel, has unique combination of atmospheric corrosion resistance, strength and economy.

For building panels, rolling doors, roof decking, ventilators and other parts exposed to atmospheric corrosion, Armco Aluminized Steel Type 2 assures long dependable service at low cost.

The atmospheric corrosion resistance of this special hotdip aluminum-coated steel was established by 15-year exposure tests conducted before the material was produced commercially. These tests showed that in mild industrial atmospheric exposure the aluminum coating lasts at least three times longer than a standard zinc coating on commercial galvanized sheets.

This durability means low maintenance costs, too. For example. Richard L. Geist, vice president of Rockaways' Playland, New York, owner of the rolling doors pictured here, says, "Aluminized Steel doors are giving us better service than any we have used. They eliminate annual painting and other expensive maintenance. We now have about 30 rolling doors made of this durable material

and are gradually replacing all our doors with Aluminized Steel."

Besides durability at low cost, Armco Aluminized Steel Type 2 offers you these additional design advantages:

High Strength—This 2-in-1 metal gives you the surface properties of aluminum with the strength of steel.

Attractive Appearance—Aluminized Steel has a pleasing matte surface that retains its "new look."

Heat Reflectivity—About 80% of incident radiant heat is reflected.

Where your designs call for a material with economical resistance to atmospheric corrosion, specify Armco Aluminized Steel Type 2 and obtain its many other advantages as well.

Write us at the address below for complete information on this new material for outdoor service.

Armco Steel Corporation

997 Curtis Street, Middletown, Ohio

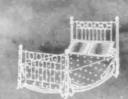
SHEFFIELD STEEL DIVISION . ARMCO DRAINAGE & METAL PRODUCTS, INC. . THE ARMCO INTERNATIONAL CORPORATION





additional information about Dur-O-wal

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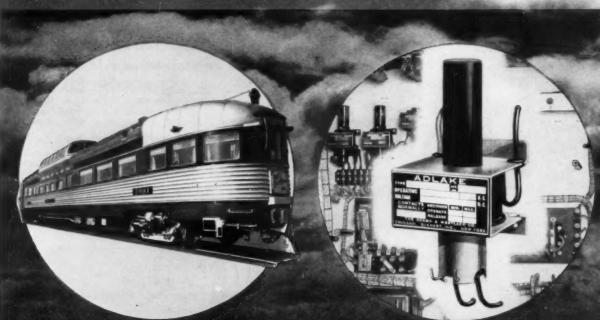






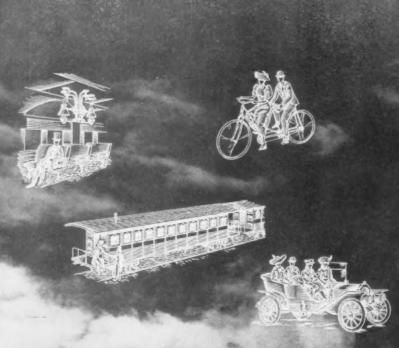


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our second hundred years!

A lot of history has passed in our first hundred years. We have seen sweeping changes take place in every area of human experience.

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Big Doings in Newark



Newcomers to the Washington Park area of Newark, N. J., are these buildings of The Mutual Benefit Life Insurance Company. The six-story building, photographed when nearly ready for occupancy, has been leased to the Hospital Service Plan of N. J. The twenty-story structure is to be Mutual Benefit's new home-office building.

Both of these two buildings were fabricated and erected by Bethlehem, using high-strength structural bolts for field connections.

As shown in the accompanying rendering, the front of the office tower is to be of metal-and-glass panel construction. Gleaming white limestone frames the blue-green facade and covers the windowless north and south end walls. The truss-type bracing shown above will support the stone facing.

For the home office building—architect: Eggers & Higgins; structural engineer: Weiskopf & Pickworth; mechanical engineer: Syska & Hennessy; general contractor: George A. Fuller Co.

For the Hospital Service Plan building architect: Frank Grad & Sons; consulting architect: Eggers & Higgins; structural engineer: Weiskopf & Pickworth; mechanical engineer: Seeyle, Stevenson, Value & Knecht; general contractor: W. L. Blanchard & Co.

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New Steel Grating

BUILT-IN NON-SKID SURFACE

FEEL THE ABRASIVE

Now Relgrit grating and safety treads bring you the advantage of an open floor—and reduce the threat of expensive skidding accidents, too.

Relgrit's surface is skid-proof because it is coated with a non-absorbent abrasive, ALUNDUM*. This abrasive is permanently bonded with tough, strong Epon Resin, a product of Shell Chemical Corporation. The chemical-resistant surface stays permanently safe under all working conditions—wet or dry . . . muddy or oil-soaked.

*Trademark of the Norton Company, Worcester, Mass.

Relgrit

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For the advantages of an open floor plus permanently <u>sure footing</u> the only answer is **Relgrit**

Relgrit is being used in major industrial plants such as atomic energy installations, chemical plants, oil refineries and many others of every description. After three years of extensive use, these firms found that it's practically impossible to lose footing on Relgrit surfaces. Even when these surfaces are covered with water, mud, oil or grease!



ABRASIVE EMBEDDED FILLING

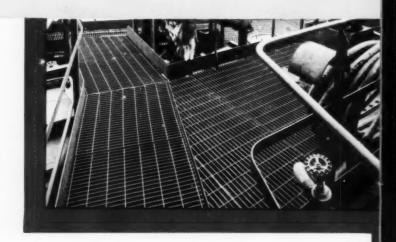
Abrasive grains are embedded in a "V" groove at the top of steel bars. Permanent bonding of Relgrit surfaces is assured by new Epon Resin, a product of Shell Chemical Corporation.

For Durability and Safety

Relgrit is extremely tough and durable, having greater wear resistance than steel and 32 times the wear resistance of 1-1.5-3 concrete. Relgrit has an adhesion to metal of 1000 pounds per square inch, a tensile strength of over 3500 pounds per square inch, and a compressive strength of more than 19,000 pounds per square inch. Relgrit is not affected by the most commonly used acids, alkalis or chemicals.

The abrasive surface of Relgrit is actually non-skid... not to be confused with the relatively smooth and ineffective serrated surface furnished on other types of grating. In addition Relgrit retains this abrasive skid-resistance permanently.

For additional information, mail coupon below.



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Gamewell offers a new concept to fire protection engineering...

FLEXALARM Fire Alarm System Planning Guide



Flexalarm F249 Planning Guide includes data on (1) Basic System plans and their integration; (2) Major Components and their function; (3) Fifty-two systems which answer specific requirements; and (4) Definitions of terms used in the fire alarm industry.

F249 is uniquely arranged for quick reference and will be supplemented on a periodic basis with additional data on fire alarm systems. Here's a new and simplified approach to the design, application and specification of interior fire alarm systems — the Gamewell Flexalarm Catalog No. F249. It is available to you without charge.

Over 96 pages of information and technical data on the Flexalarm System have been compiled by Gamewell. It includes suggested systems and layouts, gives you a complete one-source reference for specifying the best possible protection against the hazards of fire.

Send for Flexalarm F249 Now! Save valuable time, make sure your plans include the most modern fire alarm systems available. F249 can be used to write a complete specification or as the basis for special systems as required. Request your copy from: The Gamewell Company,



THE GAMEWELL COMPANY
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Flexalarm is a special line of fire alarm signal systems designed for general industrial, commercial and institutional applications. It features a new building-block concept, based on Gamewell experience in signaling and communications — allowing the architect, engineer, and user to tailor a fire alarm system exactly to needs . . . for maximum protection at minimum cost.

Control Units . . . integrating extensive combination of functions, including annunciating, battery standby, automatic detection, coded stations and special drill and test features.

GA 6-31



Luncheon to your order... 2500 times a day!

This minor miracle, performed five days a week in the new Socony Mobil employee and executive dining rooms was made possible only through the close cooperation of architect, contractor, operator and fabricator from the time the decision was made to include feeding facilities in the building.

To meet the problem of serving luncheon to 2,500 people in seven separate dining areas in a limited time, Blickman designed, built, and installed the world's most modern kitchen. All equipment is long-lived, heavy-gauge stainless steel featuring

Blickman's crevice-free, round-corner construction that simplifies cleaning and maintenance. Work areas are laid out for the most efficient operation possible...flow from production to service areas is accomplished without any confusing cross-traffic. And all of this has been accomplished within the stringent space requirements of the original specifications.

For more information regarding Blickman-Built food service systems and equipment, write to S. Blickman, Inc., 7003 Gregory Ave., Weehawken, N.J.



MAIN COOKING AREA • A 39' long section with 15 all-electric ovens, broilers, ranges and fryers. The entire area is covered by a stainless steel hood with built-in automatic CO₂ fire extinguishers that flood the hood when temperatures get too high.



GARDE MANGER AREA of stainless steel is separated from the main cooking area by a 12' aisle. An oyster and shell food counter is at extreme right. Adjacent is the cold sandwich section flanked by the salad counter. Extreme left is the dessert preparation section.



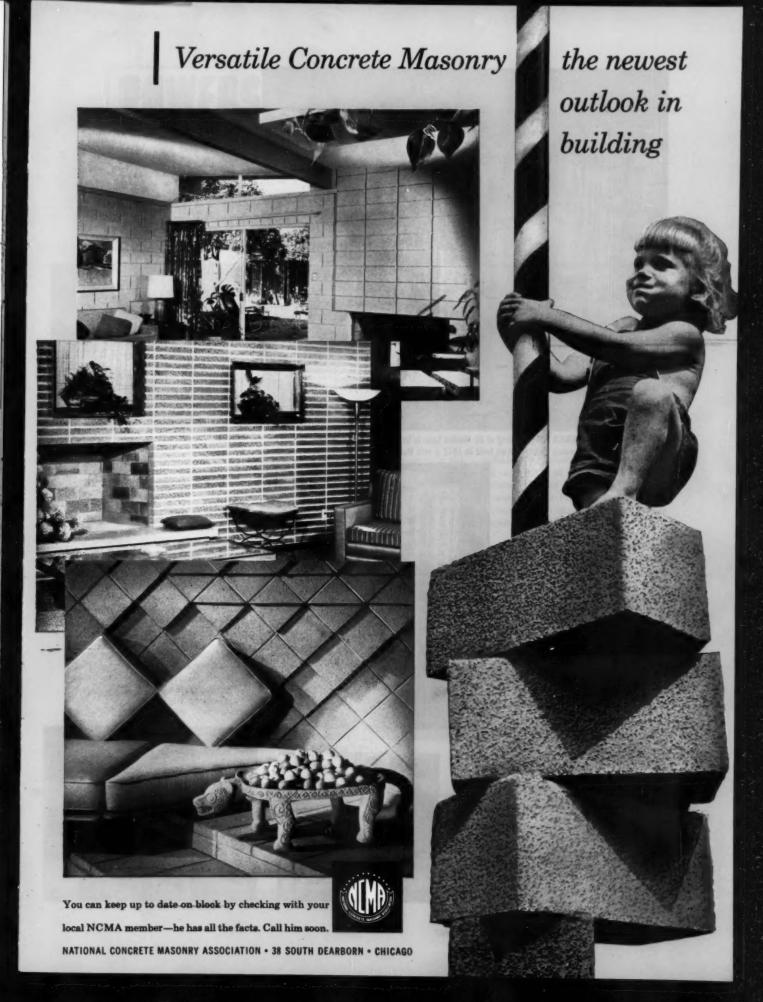
DISHWASHING AREA #1. A spacious 32'x 27' area designed for maximum sanitation. Tables of stainless steel with fully enclosed roll rims discourage dirt accumulations. All corners are rounded, bullnosed and coved. Dishwashing capacity is 10,000 pieces per hour.



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HOSPITAL EQUIPMENT . LABORATORY EQUIPMENT . KITCHEN EQUIPMENT . CUSTOM STAINLESS STEEL PRODUCTS





26 Story AMERICA FORE Building at 80 Maiden Lane is located in the hub of New York's financial and insurance district. When built in 1912 it was Manhattan's fifth largest office building

Architects for **Building Modernization:** Cross & Son

Mechanical Engineers: Meyer, Strong & Jones

General Contractor: Irons & Reynolds

Mechanical Contractor: Kerby Saunders, Inc. All of New York City



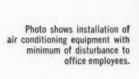
Today's 80 Maiden Lane Building represents one of the largest and most complete reconstruction job attempted in New York City. The building has over 250,000 sq. ft. and is occupied by 2,500 people. It is sturdily built, structurally sound and well located.

Modernization of lighting, heating, flooring, corridors, elevators and other facilities was accomplished without serious interruption of normal growth and expanision during the alterations period.

The H-shaped building complicated solarload effects. Changes in heat gain from the sun were caused by traveling shadows. Fast response of Powers Heating-Cooling Thermostats in air conditioning units compensate for this condition.



The Continental Insurance Company Niagara Fire Insurance Company Fidelity-Phenix Fire Insurance Company The Fidelity and Casualty Company of New York







POWERS Air conditioning control system

helped transform this 44 year old structure into a comfortable and efficient office building







Productivity of Employees Was Increased

9.3% and there were also fewer errors in the Transcribing Department and less absenteeism and reduced labor turnover, throughout the organization, resulting from more pleasant surroundings and greater thermal comfort. A 1912-vintage heating system was replaced with modern air conditioning . . . controlled by Powers.

Air conditioning system chosen was a 1350 ton high velocity conduit type for the perimeter of the building and a low pressure system for the interior zones.

(c83)

Over 1600 air conditioning units in the perimeter of the building are controlled by Powers Heating-Cooling Thermostats operating Packless valves. Primary air to these units is supplied by four air conditioning systems. Interior zones of the building are served by seven air conditioning systems which supply tempered and humidified air in Winter and cooled and de-humidified air in Summer.

Powers sub-master room thermostats or type K return air thermostats control interior zone spaces. These instruments schedule the indoor temperature between 72 and 80° F as the outside air varies between 75 and 95° F. One of the 14 Powers Control Panels with Series 100 Temperature Indicating Controllers is shown below on opposite page.

If You Are Planning a New Building, or modernizing an old one, ask your architect to include a Powers Time-proven Ouality System of Control. You will insure utmost comfort and lowest operating and upkeep cost.

For further information contact our nearest office



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plus lifetime protection against Termites and Decay



PRESSURE-TREATED LUMBER

Now—build with the design freedom of wood anywhere, in any manner. Just be sure that the wooden members of the structure in close contact with the ground or masonry are made of Wolmanized® pressure-treated lumber.

Wolmanized lumber is used just as any untreated lumber. The difference is in results. Wolmanized lumber gives positive protection against termite and rot damage; it is clean, paintable, non-corrosive, glueable.

And because Wolmanized lumber has built-in protection from decay it should be specified where these conditions exist: process moisture, condensation, high humidity, water contact.

The HOW and WHY of Wolmanized lumber and many suggestions for residential, commercial and institutional uses are covered in this 16-page handbook. Write for a copy.

Wolman Preservative Dept., Koppers Company, Inc. 1451 Koppers Building Pittsburgh 19, Pa.



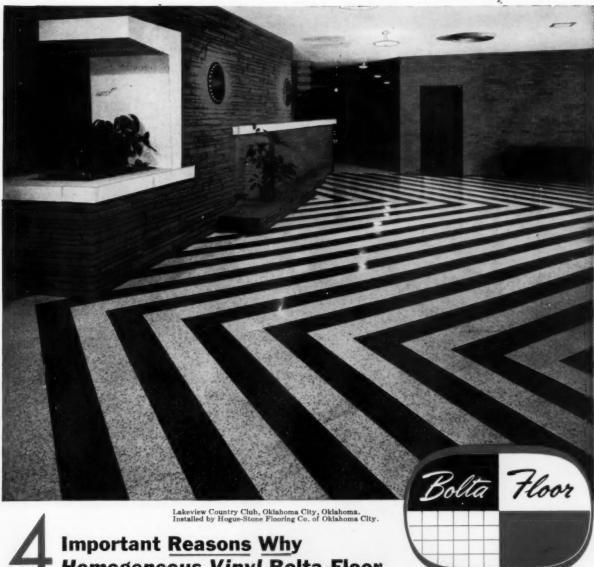
W-6

The remodeled gymnasium of the Army Chemical Center, Edgewater, Maryland, is typical of the practical use for Wolmanized lumber. The gym's rotted, wartime sub-flooring was replaced with Wolmanized lumber to provide solid, even support for 30 years or more.



Wolmanized®





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1. Bolta-Floor offers unlimited design opportunities to residential, commercial and institutional interiors. It is superior in quality, more versatile in color and style. Demand this beauty.

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Flooring Division • Akron, Ohio

On James Sales Elementary School, Tacoma, Washington

Fir plywood roof deck helps save \$3,300°°



To eliminate 2 x 4 blocking, metal "H" clips were used at unsupported panel edges. Two clips were used for each span. (Clips were responsible for approx. \$20 per M of savings; see table above).



JAMES SALES ELEMENTARY SCHOOL; Tacoma, Washington ARCHITECTS: Lea, Pearson and Richards CONTRACTOR: Nelson Construction Company STRUCTURAL ENGINEERS: Smith and Murray

5 ways Fir Plywood builds better schools

AN EXCELLENT EXAMPLE of how fir plywood roof decking sharply cuts costs as well as provides markedly superior construction is this new U-shaped, 1-story reinforced concrete school.

The contractor estimates ¾" fir plywood saved a total of \$3,300.00 on the job; \$2,800.00 in actual installed cost, plus an additional \$500.00 by amortizing costs of some of the panels previously used for forms. A total of 27,000 sq. ft. were used on the job. Design calculations by the architects show plywood superior in resisting racking forces such as wind loads and earthquakes.

Although many home builders have found thick plywood over wide rafter spacing saves money, this is one of the first detailed cost analyses for a larger building. The idea points the way to new opportunities for reducing costs on commercial and industrial buildings as well as schools.

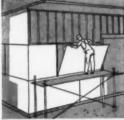
Fir Plywood

means quality construction



FOR YOUR FILES: A new portfolio assembly of basic plywood design and application data for schools, homes, commercial buildings. Includes detailed information about job described above.

| | | Only) D | | | | , Tacoma | -, |
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| Please | send | fir plyw | ood co | nstruction | portfoli | o. | |
| Name | | | | *************************************** | | | ********** |
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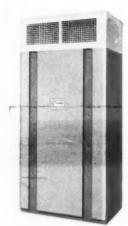
 Inexpensive, easy-tobuild screens, movable partitions.



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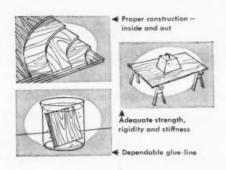
To qualify for DFPA grade-trademarks, manufacturers must pass rigid and continuous inspection of current plywood production. In addition to these on-the-spot mill checks by DFPA quality supervisors, thousands of samples undergo scientific testing in DFPA laboratories. Use of gradetrademarks may be withdrawn if quality is not satisfactory.

right grade, right quality for every job

DFPA grade-trademarks are specification guides to the right grade for a specific job. Only genuine DFPA quality-tested panels bear DFPA registered grade-trademarks. There are imitations. Don't be misled!

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Send for the DFPA Quality Story—a portfolio of grade-use data and a step-by-step description of the DFPA quality control program. Write Douglas Fir Plywood Association, Tacoma 2, Washington. (Offer good USA only)









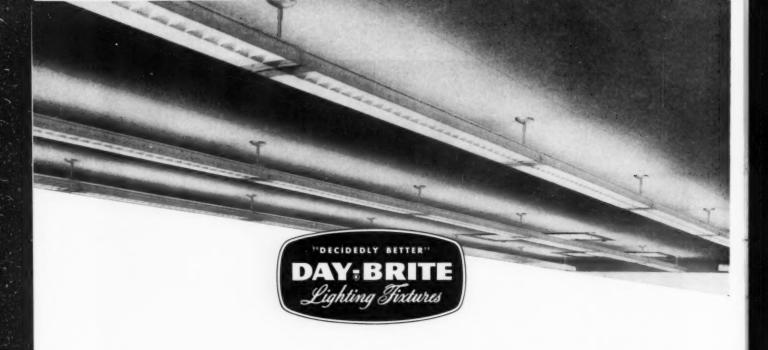




*DFPA stands for Douglas Fir Plywood Association, Tacoma 2, Washington—a non-profit industry organization devoted to product research, promotion and quality maintenance.



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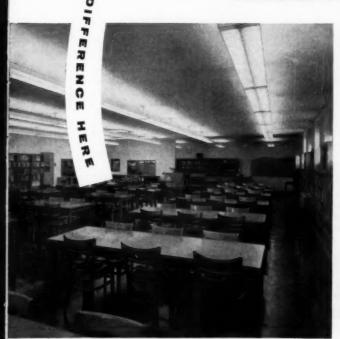
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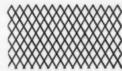


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This is Kendall Park at Franklin Park, New Jersey. Here 2000 slab-type homes are under construction—300 completed. All have visqueen film under the slab to assure life-long freedom from moisture-generated ills. Herbert Kendall, and his chief superintendent heading the project, Ed Ludlow, cement contractor agree that there is no moisture barrier as effective as visqueen, and at such low cost. "Delighted" is the consensus and they keep right on with visqueen.





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the attractiveness when stands are open. And, sightline design gives each spectator a full view of the playing floor. No other maker has pioneered as many engineered advances as Wayne.

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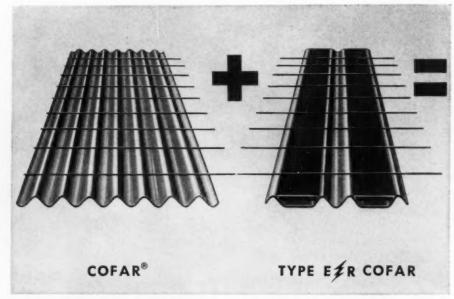
ROLLING GYMSTANDS . FOLDING PARTITIONS . OUTDOOR GRANDSTANDS

New reinforced concrete floor

Why didn't someone think of this before! One simple, cost-cutting operation, yet it combines 3 major steps in the construction of office building floor slabs—

- 1. Forming
- 2. Reinforcing
- 3. Electrification.

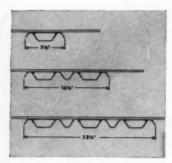
Heart of the system is Type E-R (for "Electrically Ready") Cofar, new cellular units designed to carry wiring. When these cells are combined with Cofar—a unit that forms and reinforces concrete—all 3 slab requirements above are met before concrete is placed! Chief advantages: A low-cost, high-strength floor with electrical flexibility that meets the present and future demands of any office building. No wasted fill. No wasted ducts or wiring. Fewer construction steps. Here's how it works . . .



Conventional Cofar units are deep-corrugated high-strength steel units—2½ feet wide—with transverse wires welded across corrugations. The steel serves as a tight form for wet concrete and becomes main positive reinforcement when concrete sets. T-wires furnish necessary temperature reinforcement and mechanical anchorage between slab and steel.

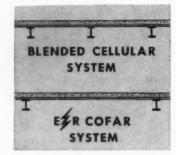
E-R Cofar cells are used between conventional Cofar units. These cells are wide troughs capped to form spacious 5.2 square inch raceways for wiring. NOTE: E-R Cofar units also have T-wires welded across corrugations to maintain Cofar composite slab action. Type E-R Cofar is equally suited to steel or concrete frame construction.

CHECK THESE MONEY-SAVING ADVANTAGES OF THE EXTR COFAR SYSTEM



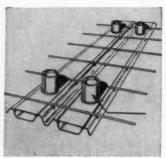
1, 2 or 3-Cell Units

With E-R Cofar, you choose the amount of electrification you want. One, two and threecell units are available and spacing between units may be varied as necessary. Units are available in lengths to 16 feet and are manufactured from heavy gage galvanized steel.



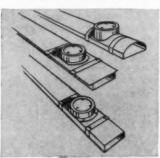
Reduces Framing

Cofar slabs are more economical than any other type of floor forming and deck system on 10' to 14' beam spacings. Wide spacing eliminates need for intermediate beams, saves on fire-proofing materials. Lighter dead loads also save on footings and foundations.



Pre-Set Inserts

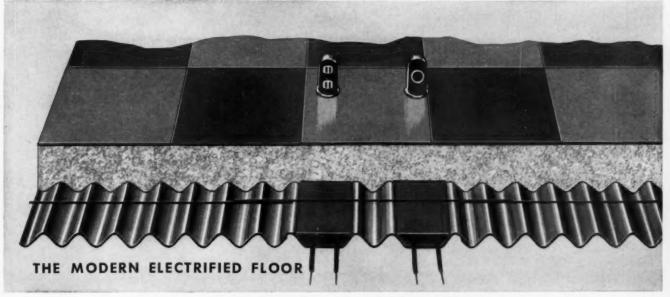
Available with either pre-set or with blank cap plate for after-set inserts, E-R Cofar provides complete electrical accessibility. Pre-set inserts eliminate noisy and costly concrete drilling operation. If desks are rearranged, floor service outlets can be located in minutes.



Header Adaptability

Any Underwriters' Laboratories-approved header duct system (such as Nepco or Walker) can be used to activate Type E-R Cofar cells. When two or three-cell units are used, service fittings can be placed as closely as 8 inches apart on the finished floor (see above).

system is completely electrified



In the finished system, E-R and conventional Cofar units work together to provide a superior reinforced concrete floor with complete electrification. A network of E-R cells—placed where you want them—assure electrical flexibility for the life of the building. Wires are pulled through the raceways and brought to desks and machines no matter where they are located. At the same time, Type E-R Cofar

floor slabs retain all the advantages of reinforced concrete. Concentrated loads are distributed by the 2-way slab action of high-strength Cofar floors. Structural tests verify the ultimate strength to be 7 to 10 times design load. Use of 1.5 oz. hot-dip galvanized coating guarantees building life permanence. Type E-R Cofar floor slabs offer a low-cost, high-strength floor which is always "electrically ready."

UNDER CONSTRUCTION . . .

E-R Cofar has been specified for the Fidelity National Bank Building in Baton Rouge, La.

Architects: Wilson & Coleman Contractor: L. W. Eaton Co., Inc. Structural Engineer: Metrailer & Ingram Electrical Engineer: Chesson, Forrest & Holland Electrical Sub-Contractor: Sachse Electric Company

trical Sub-Contractor: Sachse Electric Compa (All firms located in Baton Rouge, La.)



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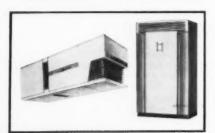
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for H. Daroff & Sons, Philadelphia, manufacturers of Botany "500" and Worsted-Tex clothing. Note that General Electric Ceiling-Mounted Units take no floor space—require little or no ductwork.

General Electric Zone-by-Zone Method selected for world's first fully air conditioned men's clothing plant



H. Daroff & Sons, Phila., first plant of its type to be fully air conditioned – thanks to General Electric Zone-by-Zone method.



CEILING-MOUNTED UNITS (left). Use no floor space – air-cooled and water-cooled.

FLOOR-MOUNTED UNITS (right). May be stationed in space or away from area served.

The H. Daroff and Sons plant is a typical example of how General Electric Zone-by-Zone Air Conditioning fully meets requirements for any type of factory or office building—even overcomes seemingly insurmountable problems. This system is also a sure way to solve budgeting problems. It is easy to install—no costly interruptions—no major alterations—no heavy initial outlay. Its operation is economical, and it minimizes the problem of space.

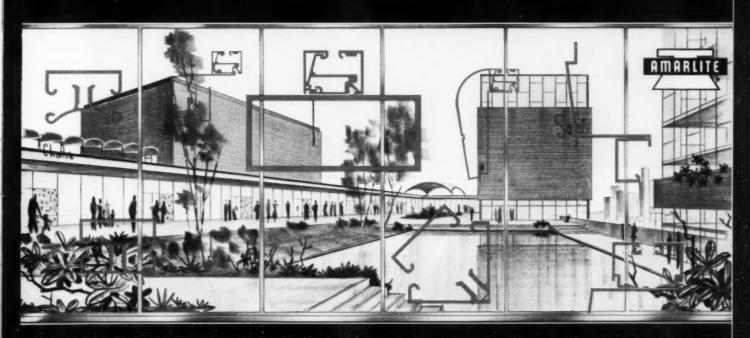
More and more architects are specifying General Electric Zone-by-Zone Air Conditioning as the most practical answer for every requirement. General Electric Company, Commercial and Industrial Air Conditioning Dept., 5 Lawrence St., Bloomfield, N. J.

Progress Is Our Most Important Product

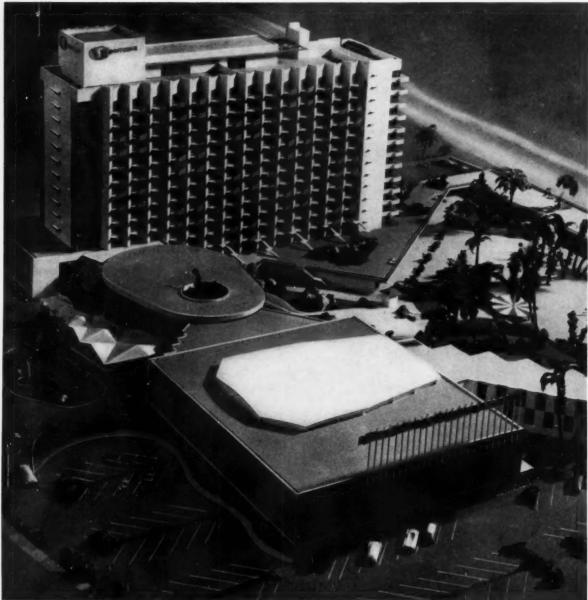


In Canada, Canadian General Electric Co., Ltd., Montreal

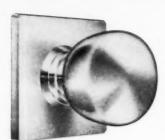
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available for oil, gas or dual-firing, J-C Direct-fired units are ideally adopted for large com-mercial or industrial heating jobs. They may be installed on the floor, or suspended either

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Visit the J-C exhibit, space 846-850 - 13th International Heating and Air Conditioning Exposition - International Ampi-theatre February 25 to March 1, 1957.



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Brixment mortar has high waterretaining capacity. It resists the sucking action of the brick. It stays plastic and workable longer. Brixment mortar therefore makes it easy for the bricklayer to lay the brick accurately, before the mortar has stiffened. Brixment mortar has great plasticity, high water-retaining capacity and bonding quality, great resistance to freezing and thawing, and freedom from efflorescence. Because of this combination of advantages, Brixment is the leading masonry cement on the market.

BRIXMENT

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

OFFICE CAFETERIA . . .



LASTING BEAUTY

The busy office employees of the Socony Mobil Oil Co. don't have to search Manhattan for a comfortable place to eat. They just ride the elevator down to this spacious cafeteria in the basement of the new Socony Mobil Building. The handsome floor that contributes so much to the relaxing atmosphere is Armstrong Excelon Tile—in the softly shaded "Designers Series." Excelon was specified here for its wearing qualities, too. Durable and grease-proof, it will keep its good looks for years, even around the counters where 1,300 people are served every day.

Socony Mobil Oil Company, N.Y.C., Employees' Cafeteria Architect: J. Gordon Carr & Associates

DEPARTMENT STORE . . . CLOTHING STORE

the flooring spec: Armstrong Excelon Tile

EASE OF MAINTENANCE

No matter how much it snows, or how much slush and dirt are tracked in, the smart Excelon Tile floor of Donaldson's new department store unit in the Southdale shopping center outside Minneapolis never looks messy and unattractive. During business hours, an occasional quick mopping wipes mud and water right off the smooth surface of Excelon Tile, without leaving a trace. After hours, regular maintenance is fast and economical.

Donaldson's, Southdale, Edina, Minn. Architect: John Graham & Co., Seattle, Washington Interior: Alvin L. Weidt & Assoc.,

Minneapolis, Minn.



ECONOMY The Bond Store

The Bond Stores are famous for quality clothing at economy prices. Bond management know the value of other kinds of economy, too. For their new Wilshire Blvd. store in Los Angeles, they wanted a fashionable floor as a background for modern merchandising displays. But because the floor area is so large, cost per square foot had to be kept down. Good looks and low cost combined to make this floor the ideal choice for this handsome interior.

Bond Clothing Store, Wilshire Boulevard, Los Angeles Stiles and Robert Clements, Architects and Engineers Interior: Burke, Kober and Nicolais

Armstrong Excelon Tile is a vinyl-asbestos floor that costs only a few cents more per sq. ft. than asphalt tile. A wide range of distinctive designs and colors makes Excelon Tile suitable for any interior. Exceptionally durable and dimensionally stable, it can be specified with confidence for heavy-traffic areas. The vinyl content of Excelon Tile makes it highly resistant to greases, oils and alkalis. It can be installed over any subfloor: suspended, on grade, or below grade.

Because Armstrong makes all types of resilient floors, we can offer unbiased recommendations for every flooring need. For information, samples, complete specifications, design and color scheme assistance, call the Architectural-Builder Consultant in your nearest Armstrong District Office or write Armstrong Cork Company, 1503 Rock Street, Lancaster, Pennsylvania.





Armstrong FLOORS

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)





Linoleum, standard gauge Asphalt Tile, 3/16" (C, D) Linoleum, 1/a" ("Battleshipt") Greaseproof Asphalt Tile



Corlon (Sheet Vinyl) Linoleum, ½" Cork Tile, ½" Excelon® Tile (Vinyl-Asbestos) ½"



Rubber Tile, 1/8" Cork Tile, 3/16" Linotile® Corlon (Hydrocord* Back) Linoleum (Cushion-Eze* Back**)

70¢

Custom Corlon
Tile (Homogeneous Vinyl)
3/32", ½"
Cork Tile, 5/16"
Rubber Tile,
3/16"
Corlon
(Cushion-Eze
Back)



Custom Vinyl Cork Tile Imperial Custom Corlon Tile

*TRADE-MARK



The J-M Sanacoustic ceiling in the Ohio Fuel Company office in Columbus, Ohio, effectively muffles the noise of business machines.

Architects: Karlsberger, McClellan & Gallogly.

-Another noise problem licked!

Johns-Manville Acoustical Panels increase office efficiency, reduce tension!

In NEW BUILDINGS OR OLD, business, industry and institutions depend on modern acoustical materials to achieve maximum efficiency. Johns-Manville offers a choice of highly efficient soundabsorbing materials for every need:

J-M Sanacoustic® Panels — perforated metal panels backed with a fire-proof, highly sound-absorbent element.

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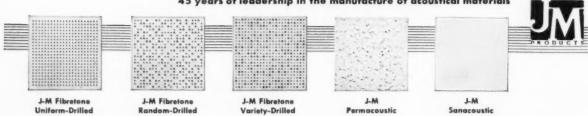
bine maximum efficiency with handsome fissured surface. Made of mineral wool to meet all fire-safety requirements.

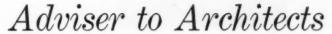
Send for your free copy of the new brochure entitled "Sound Control." Write today to Johns-Manville, Box 158, Department AR, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

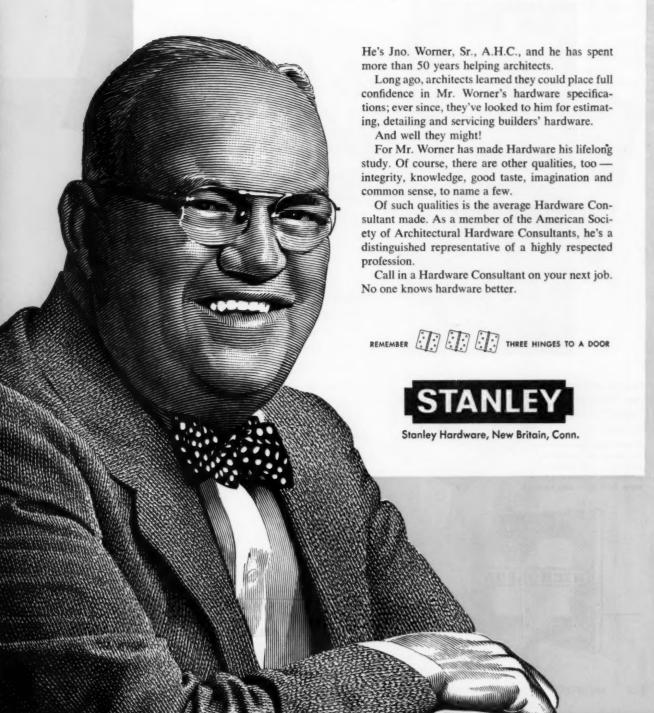
See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville

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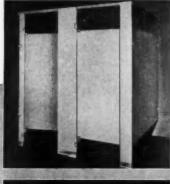




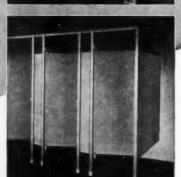




in standard colors



for QUICK / DELIVERY! Elementary School sizes ... with concealed hinges



Now...Nicholson Toilet Compartments are stocked in standard styles and colors for quick delivery "from stock."

Modern production facilities, housed in a new 67,000 square-foot plant, are busy building up a standard-size stock of these three most popular styles. From ultramodern to rugged utility designs, you can get the toilet compartments you need in a hurry.

You can specify better-built compartments . . . Nicholson compartments . . . and have them shipped right away! No waiting. No delay in completion of important contracts.

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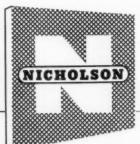
Nicholson Toilet Compartments are immediately available in the following types . . . in standard colors:

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Contains complete specifications illustrations and engineering drawings . . . facilities, styles, construction, layouts and hardware. Send for a copy today!

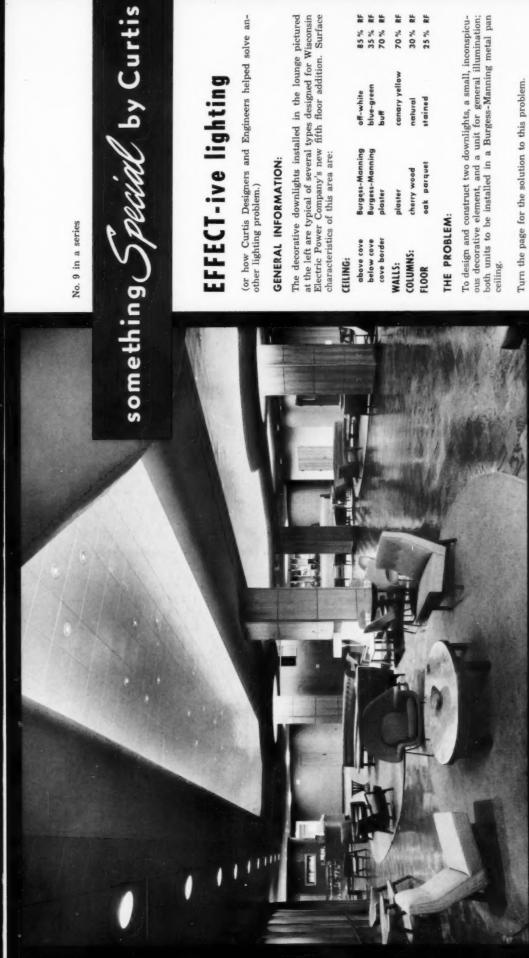




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GENERAL LOUNGE

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WISCONSIN ELECTRIC POWER COMPANY, MILWAUKEE LIGHTING DESIGNER: SPECIAL SERVICES SALES DIVISION

GRELLENGER & ROSE, MILWAUKEE

ARCHITECTS:

WM. EDWARDS, WISCONSIN ELECTRIC POWER COMPANY, MILWAUKEE

WISCONSIN ELECTRIC POWER COMPANY, JACOBSON INTERIORS, MILWAUKEE INTERIOR DECORATOR: ELECTRICAL ENGINEER:

MILWAUKEE

EFFECT-ive lighting

(or how Curtis Designers and Engineers helped solve another lighting problem.)

GENERAL INFORMATION:

at the left are typical of several types designed for Wisconsin Electric Power Company's new fifth floor addition. Surface The decorative downlights installed in the lounge pictured characteristics of this area are:

CEILING.

| | 2 | R | 2 | - A | - | 86 |
|---------|-----------------|-----------------|-------------|---------------|-------------|-------------|
| | 85 % | 35 % | 70% | 70% | 30 % | 25 % RF |
| | off-white | blue-green | boff | canary yellow | natural | stained |
| | Burgess-Manning | Burgess-Manning | plaster | plaster | cherry wood | oak parquel |
| CITINO: | above cove | below cove | cove border | WALLS: | :OLUMNS: | 100R |

THE PROBLEM:

both units to be installed in a Burgess-Manning metal pan To design and construct two downlights, a small, inconspicuous decorative element, and a unit for general illumination;

Turn the page for the solution to this problem.

in Chicago

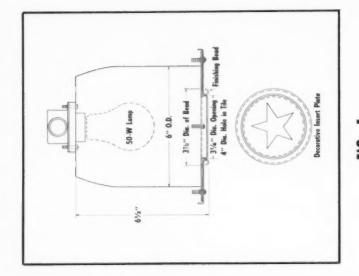
CHICAGO 38, ILLINOIS 6135 W. 65th ST.

LOS ANGELES 33, CALIF 242 S. ANDERSON ST. in Los Angeles

in Canada

TORONTO 17, CANADA 195 WICKSTEAD AVE.

ELECTRICAL CONTRACTOR: A. C. ELECTRIC COMPANY, MILWAUKEE

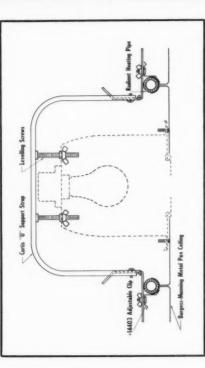


Removelile Box Cover 150-W. Projector Lamp 6" Dia. of Hole in Tile 51/4" Dia. Opening 5 %" Die. of Bead

THE SOLUTION:

Curtis Designers and Engineers designed a small decorative unit to achieve the desired effect for installation in the specified ceiling, and received approval.

desired decorative effect. The bottom plate of the unit has an open-bead edge formed Cross section details of this unit, a spun aluminum housing finished baked white Fluracite enamel, are shown in Fig. 1. The star-shaped design shown was suggested to obtain the around the pan opening, providing a finished edge for the pan and a smooth "collared" opening for safe access to the lamp. For general illumination, Curtis "Spotty" units were similarly adapted, excepting that the opening in the bottom plate is 51/4" and contains no decorative plate, as shown in Fig. 2. Special installation facilities were necessary to install the units in the Burgess-Manning



ceiling. "U" support straps, like those used to install Curtis troffers, lengthened to accommodate the added depth of these units provided a solution as shown in Fig. 3. Units are suspended and levelled by two screws on the "U" support strap, which is secured to the pipe-coils of the ceiling with Curtis #14403 adjustable clips. Recessing depth of the small, specially designed unit is 84," and for the Spotty units, which required two straps, 934". All lighting circuits are operated on individual dimmer controls, making possible many lighting effects. The evening sky appearance created by the small decorative units give an atmosphere of life and sparkle, while the specially adapted Spotty units provide higher levels of illumination when required. Thus it is, through their knowledge of lighting design and the understanding of the problems involved, that Curtis Designers and Engineers were able to help solve another lighting problem.

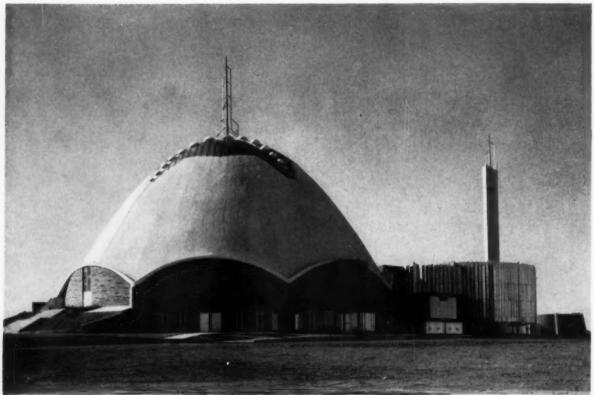


Gerald B. Cox, Architect . H. George Schloemer, Contractor

Pella wood folding doors

THESE QUALITY WOOD FOLDING DOORS harmonize beautifully with interior wood trim, paneling, and furniture. Select from natural veneers of pine, oak, birch. Philippine Mahogany. And PELLA doors feature new whisper quiet operation. Available in stock and custom sizes.

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HRISTIAN CHURCH, OKLAHOMA CITY, OKLAHOMA

Magee makes contract carpeting news

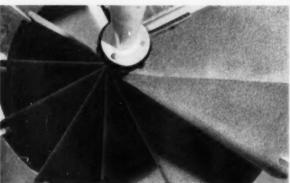
In this beautiful church, shown editorially in February 4 LIFE, is just one example of our com-

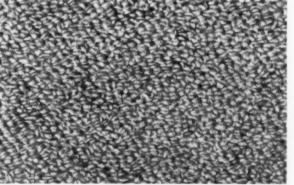
plete contract program. Created for the modern feeling of the Christian Church of Oklahoma City, the carpet is

in exactly the weight, the weave and the color that add warmth and hushed reverence to this

House of worship. Whatever *your* contract carpet requirements in style, color, design, budget, consult Magee first!







For further information on contract carpet, write to The Magee Carpet Company, 295 Fifth Avenue, New York, N. Y.



The Mill of 3000 Dinner Pails." The Magee Carpet Company. Mills: Bloomsburg, Pennsylvania. Sales Offices: New York, Chicago, Boston and San Francisco



Gerald B. Cox, Architect • H. George Schloemer, Contractor

Pella

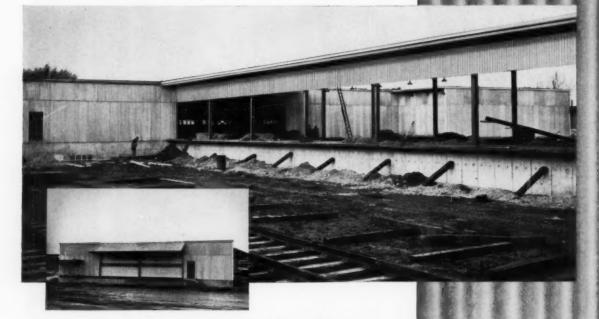
ADD CHARACTER TO HOMES with PELLA Wood Casement Windows. The only ventilating wood casements strong enough to carry 24" x 60" glass. And the only windows with built-in Rolscreens... that roll up and down like window shades. PELLA casements can be furnished with PELLA's own dual glazing panels or insulating glass.

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|--|------|----------|
| Please send helpful 20-page book, "Library of Window Ideas." | | - 10 |
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| ADDRESS | | |
| CITY | ZONE | STATE |
| ATTENTION MR. | | TEL. NO. |

THESE LOW COST WALLS STAY ECONOMICAL

Another Gold Bond
ASBESTONE APPLICATION
built to last 100 years
...or more!



Here's why Mr. L.V. Lacy, Vice President of Sordoni Construction Co., chose Gold Bond Corrugated ASBESTONE "400" for this Fast-Freight Terminal

"light weight - speedy erection - low cost - freedom from maintenance"

This Buffalo Fast-Freight Terminal for the Delaware, Lackawanna & Western Railroad Co. was built by Sordoni Construction Co. As Mr. Lacy of Sordoni Construction Co. puts it:

"Gold Bond Corrugated ASBESTONE "400" was a most practical material for the exterior walls of the warehouse, which is not heated, because of its light weight, speedy erection, low cost and freedom from maintenance." These are four of the most important points to consider when you specify building products for exterior walls or roofs.

Mr. Lacy's firm put 27,000 square feet of corrosion-resistant Corrugated ASBESTONE "400" on these sidewalls. The money that Gold Bond ASBESTONE "400" saved on the initial application was only the start. ASBESTONE "400" will save maintenance dollars every year—and it actually grows stronger with age.

Does this Fast-Freight '400' story suggest a Gold Bond® Corrugated Asbestone use to you? Wherever you use it, you're getting strength and good looks for a lengthy lifetime. For further details, write Dept. AR -37, National Gypsum Company, P. O. Box 5257-B, New Orleans, La.

CORRUGATED ASBESTONE "400"

NATIONAL GYPSUM COMPANY

Gold Bond Building products





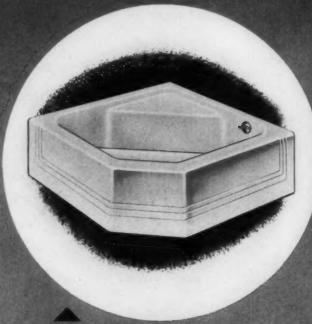


Ariene Lavatory—custom lavatory has modern, sloping back for Quality or Monogram Fittings—vitreous china surface is easy to keep clean. Comes in popular 24" x 20" size with generous bowl. In decorator colors and white.

Monogram Fittings—Personalize bathrooms with users' initials. Satin chrome finish, with handles in clear or smart colors. Nu-Re-Nu assembly assures long dependable use.

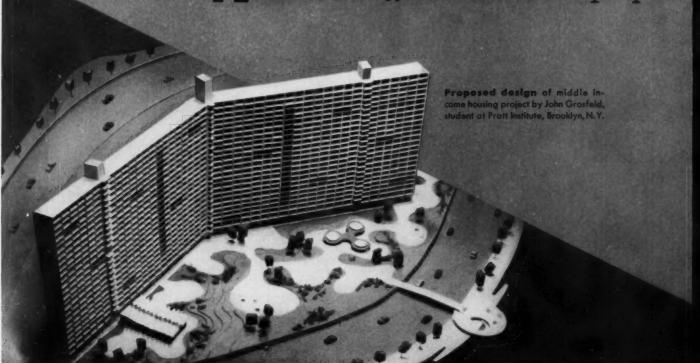
Neo-Health Toilet—first really new toilet in years. Built-in spray, separately controlled, provides water from special compartment for thorough personal cleansing. New design saddle seaf facilitates use. Harmonizes with other American-Standard bathroom fixtures in style and design.

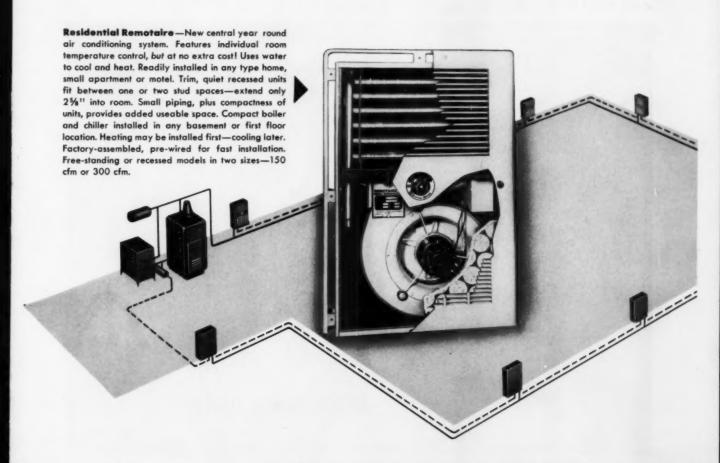




Neo-Angle Bath—Unique design affords a full-size bath in a $4^{\prime} \times 4^{\prime}$ area. Twin corner seats aid foot bathing, act as toiletry shelves. Flat bottom for added safety. Rugged cast iron construction finished in beautiful stain-resisting enamel—in popular American-Standard colors and white.

AMERICAN-Standard helps put

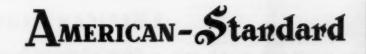




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If you want your new homes and apartments to stay modern, keep that "look of tomorrow" for years to come—then specify American-Standard. Why? Simply because American-Standard products offer extra comfort, convenience, design and beauty. Made of the finest quality materials available, American-Standard products can be installed quickly, easily and economically. They'll take continuous hard use with only a minimum of maintenance. Bathroom fixtures are available in a wide selection of the latest colors—they put your buildings years ahead in eye-appeal.

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PLUMBING AND HEATING DIVISION





Dallas Independent School District Administration Offices have ample room to handle needs of Dallas' growing population.

Dallas gears for big boom in school enrollment

This Dallas school-administration building
is built for the future, with a plan for
expansion — and up-to-the-minute air-conditioning
equipment by American Blower



Individual room control of indoor climate in both interior and peripheral zones gives administration building "custommade" air conditioning. Outside offices, for example, are conditioned by 140 American Blower Inductor Units.



Nerve center of the air-conditioning system is the American Blower Tonrac® centrifugal refrigerating machine, which supplies chilled water to system; adjusts itself imediately to fluctuations in air-conditioning load and weather.

To meet its growing educational needs, dynamic Dallas, Texas, is sponsoring a multimillion-dollar school-plant expansion program – a part of which is the modern addition to the school-administration building above.

This streamlined structure is capable of housing the school-administration offices for a city of 1,000,000, and is fully air-conditioned using American Blower air-handling and air-conditioning equipment. An important reason for this choice: American Blower offered a complete line of quality equipment—designed, engineered, and manufactured to work together.

If your plans include air conditioning, why not call our nearest branch office? American Blower Division of American-Standard, Detroit 32, Michigan. In Canada: Canadian Sirocco products, Windsor, Ont.

Building credits: Architect: Peyton Cooper. Consulting Engineers: Zumwalt & Vinther. General Contractor: Hal C. Dyer. Mechanical Contractors: Brown-Olds Plumbing & Heating Corporation.

AMERICAN BLOWER

Division of AMERICAN-Standard



Air-conditioning equipment for every business



tough and translucent

Highly attractive partitions made of Lustrex* provide privacy-plus

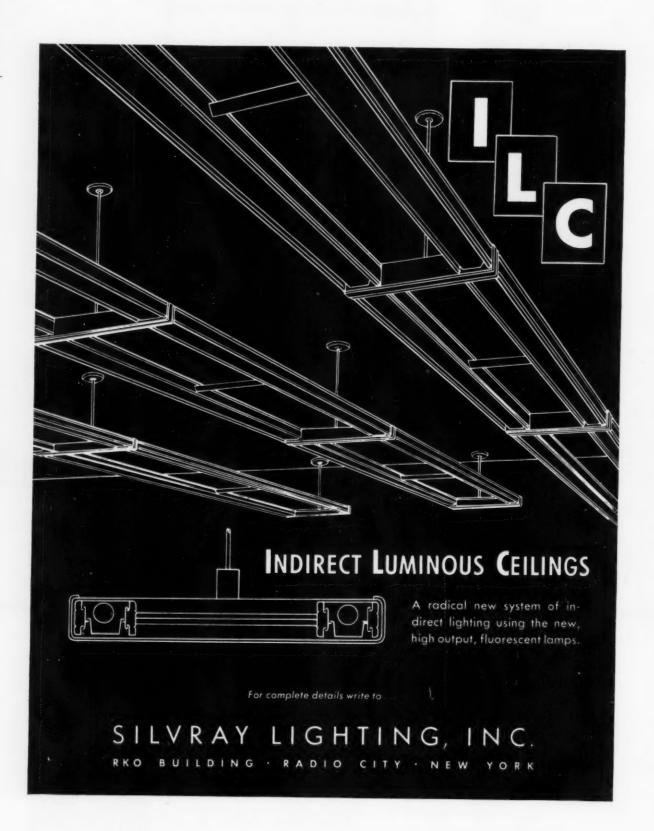
The architect finds a highly willing tool in Lustrex styrene. Made up into panels, for example, this Monsanto plastic combines shatter-resistant strength with light weight. It offers wide color choice, great decorative latitude. Lustrex styrene is low in cost. It requires minimum up-keep.

The panel illustrated is being used as a sliding partition in Miami's fabulous new Americana Hotel, designed by Morris Lapidus A.I.A. Made of Lustrex by Lurie Plastics, Inc., Colonial Heights, Va., these "Luraplast Fiber Gold" panels create a rich 3-dimensional decorative gold effect. They are partitions with superior translucency, yet assuring desired privacy. They are rigid, non-warping, washable. They won't rust or mildew and the molded-in color can't fade or chip off.

New developments in plastics materials and processing techniques are under constant study by Monsanto's Structural Plastics Engineering Group. You are invited to call on this group for technical counsel in the use of plastics for building or construction.

New Report, "Plastics in Housing" has recently been published by the Department of Architecture of the Massachusetts Institute of Technology. The M.I.T. study was made possible by a Monsanto grant-in-aid. Copies are available at \$2.00 each. Address Monsanto Chemical Company, Plastics Division, Room 1446, Springfield 2, Mass.







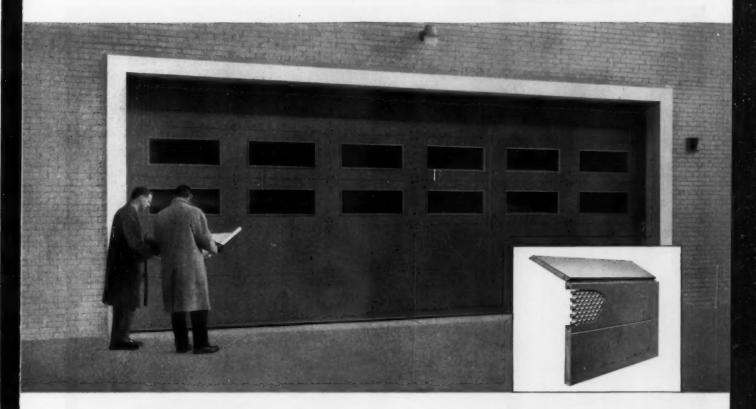
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Barcol OVERdoors and Operators Automatic Controls Uni-Flo Air Distribution

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Weather-King Flush Doors weather like a wall

New Weather-King Flush Barcol OVERdoor Sections introduce hardboard sandwich construction to overhead doors for industrial, commercial, and residential use. Famous Weather-King hardboard facing has established its excellent weathering characteristics through thousands of Barcol-guaranteed panel door installations all over the country. Now applied over a resin-impregnated honeycomb core, this same facing gives a flush section that weathers as well as the outside wall in which it is installed! Weather-King facing is guaranteed not to split, crack, delaminate, or chip because of weather; core and bonding adhesive are impervious to moisture; redwood closures insure against moisture damage and decay.

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The exclusive sandwich construction of Weather-King Flush Sections breaks the inner space into hundreds of small captive air cells, eliminates convection currents, and provides insulating effect equal to that of a 5-in. house wall—U factor .259! Weather-King Flush is the first

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Exclusive Barcol Cam Action closing carries door free of stops until it is fully lowered, then shifts the entire door against stops for a firm weathertight closure automatically adjusted to expansion or contraction due to weather changes. Opening and closing are friction-free—yet air does not leak in to disrupt temperature control.

Design them like walls!

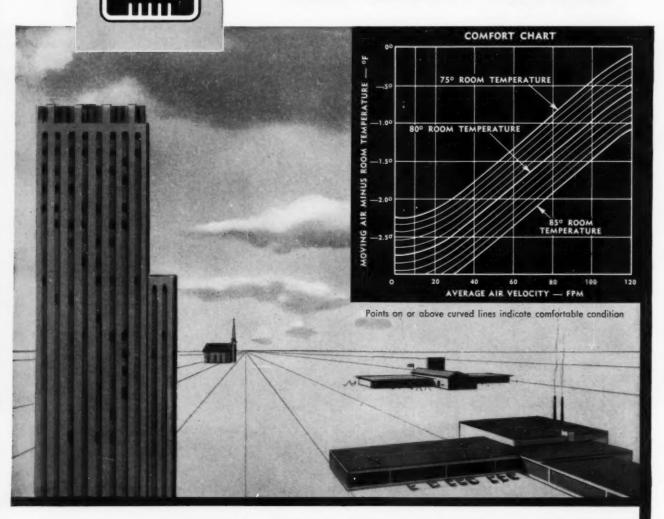
Weather-King Flush Doors give the architect a new lease on design appearance by making flush door simplicity and flexibility fully practical wherever overhead doors are to be specified. Barcol OVERdoors and Operators are installed and guaranteed by Barcol distributors, coast to coast. For free design service, call your distributor (under "Doors" in phone book) or write.

BARBER-COLMAN COMPANY

Dept. P73, Rockford, Illinois

BARBER

Electrionic Automatic Controls... for ideal "indoor



Whatever your air conditioning needs, Barber-Colman guarantees results that meet requirements of above Comfort Chart

Creative team engineering at Barber-Colman Company effectively combines the modern advances of automatic temperature controls and engineered air distribution for performance-guaranteed results. Write for descriptive literature . . . or ask your architect or engineer about this exclusive "one responsibility" feature of Barber-Colman products and service.

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COME TO ONE SOURCE...COME TO......

Uni-Flo Air Distribution

weather" that's guaranteed!

Barber-Colman combined products assure proper relationship

of velocities and temperatures for constant comfort . . .

To the occupant of a building, what instantly marks the difference between a properly functioning air conditioning system and a poor one?

The correct system provides draft-free, quiet, uniform distribution of the air . . . at a constantly held, comfortable temperature, regardless of outside temperature changes.

The incorrect system varies from "too warm" to "too cool," or "too drafty." Although it may be delivering exactly the same amount of conditioned air, it is not engineered to maintain proper relationship between velocities and temperatures.

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Such performance is assured when you install Barber-Colman Electrionic Automatic Controls and Uni-Flo Engineered Air Distribution. For Barber-Colman has long years of combined experience in both automatic controls and air distribution — and assumes one responsibility to bring you ideal "indoor weather." Call your nearby Barber-Colman Field Office, or consult your architect or engineer.



THERMOSTATS Room and remote bulb types.

MOTOR-OPERATED VALVES-Wide range of sizes and types.



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Automatic Controls

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This company has a remarkable background in design, engineering, and precision production of fine equipment. Our field staff is widely experienced in solving all types of temperature control and air distribution problems.



Uni-Flo Engineered Air Distribution

In addition to Uni-Flo units shown above, Barber-Colman Company produces a complete line of air distribution products for better air handling. Make this your source for reliable performance data and fine-quality equipment... take advantage of the continuous flow of new developments from the renowned Barber-Colman Laboratory.

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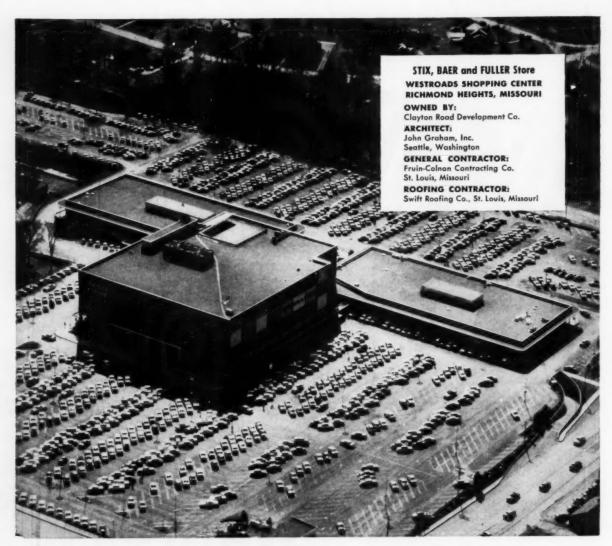
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MARCH 1957 ARCHITECTURAL RECORD

ARCHITECTURE, ATOMS AND A PEACEFUL WORLD

A series of articles prepared with members of the Committee on Nuclear Facilities, American Institute of Architects, to animate architectural imagination in a new and challenging field

Drift tubes in Heavy Ion Linear Accelerator, University of California Radiation Laboratory, Berkeley

FOR AN ARCHITECTURE OF NUCLEAR BUILDINGS

It is too much to expect that an architecture of nuclear buildings should have evolved in the brief period in which there have been such buildings. The first cyclotron was not even conceived until 1929; the first building specifically designed for an accelerator, the Cyclotron building at Berkeley, was not begun until 1941. The first reactor, the graphite "pile" at Oak Ridge, did not "go critical" until late in 1942. The short span of 15 years encompasses all that we know of the needs to be met in housing these huge and vastly powerful machines.*

In this field of nuclear science, however, 15 years is a long time. In that time the early experimental nuclear science has become applied nuclear science, first for the weapons of war and now for the pursuits of peacetime industry; and basic research has progressed to new and constantly changing frontiers.

Change is, in fact, one of the few expected and expectable aspects of nuclear science. In the flash of an idea, a huge and costly machine, and the building to house it — neither one finished — can be made obsolete. This morning a progressively longer radius for a circular "racetrack" seems the ultimate in accelerator design; this afternoon, the idea of making particles in motion collide head-on with each other (instead of bombarding atoms at rest) explodes the morning's firm convictions. Even the neophyte soon learns that nothing is the "ultimate" in nuclear science. There is always more to learn, and new ways to learn it.

The buildings where nuclear tools - accelerator, reactor, isotope — are used present a challenge to the imagination of the architect but until 1954 very little information on them could be made public, and very little data on their design needs was available. The Atomic Energy Act of 1954 declassified much of the technical data, opened the application of nuclear knowledge to legitimate industries and businesses, and widened the scope of the architect's potential work in the field. In 10 more years, few industries and businesses will not have felt in some way the impact of nuclear energy on their methods and products.

The potential is indeed great and, for architects in particular, challenging. But it is not an easy challenge to pick up in design, for either industry or research.

Industry's part in the field is still new. As yet it does not have the backlog of experience to evaluate manufacturers' recommendations for planning, and building concepts as a result tend to become rather rigid interpretations of the recommendations.

In the field of basic research (largely carried on at installations at national laboratories and at universities) a good many buildings have been built but only

The first of a series of architectural implications in such buildings begins on page 186.

a few of them warrant architectural consideration. During World War II, when both experimental and applied research were in their infancy, speed conditioned every thought and many of the buildings put up were prefabricated, demountable structures, little more than sheds. Now that these are being replaced with permanent buildings and new buildings for new needs are being erected, it might be hoped that the criterion would be more than just permanence, that the program would be to provide more than well-constructed shelter, to plan for probable as well as immediate needs, and to create environment for working, through design of spaces derived from, and adapted to, building use.

Logical though this may sound, its accomplishment has been rare. Architecture is not the end result of toting up a score on qualifications and allotting the job to the firm whose numerical rating comes nearest a predetermined number, as is done in some agencies in selecting the architect-engineer for a project; nor can it be had when the hands and the imagination of the architect are bound by restrictions which are more of a deterrent than an aid to good and economical design. Furthermore, engineering, not architecture comes from the drafting board of an engineer. Even when the engineer has an architect on his staff, the net result is, primarily engineering, not architecture.

Nor does architecture result in the full sense unless the architect has a chance to perform his full service. It is not unusual for a technical staff member (variously an architect, an engineer, or both) to do all the probing of needs, analysis and evaluations of space and area relationships, and from these, the preliminary design of the building. When the architect is selected, he gets the commission — and a diagram of the plan he is to work with. There is little left for him, as designer, to do. This system saves time, it is true; but it robs the architect of his traditional role as designer, and the project of his independent analysis and imagination.

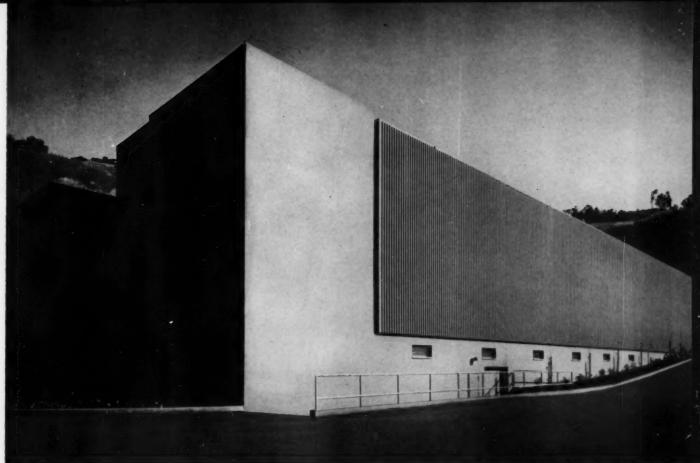
Perhaps these are the facts of architectural life today but do they add up to architecture? Unless the architect has the courage, as some have had, to do his own probing, analysis and design solution even in face of the ready-prepared diagram (sometimes referred to euphemistically as a "program") these buildings will result from the thinking of others not the architect's.

But the picture is not all gloomy. With increased information, the architect will gain confidence — his own and that of his clients. Confidence, performance, good reputation, and conviction are assets anywhere; in the nuclear field they have become prerequisite.

We are at the beginning of a new and revolutionary era. The challenge in it for architecture — the mirror of man's achievements and aspirations - is to interpret its needs and means in terms of function and form, so to combine in its unique way both the high esthetic and the fully practical in one working whole.

The articles are based on information assembled by AIA's Committee on Nuclear Facilities through first hand study of AEC and other atomic energy installations throughout the country. Future articles will deal with the architectural implications in structures for reactors, medical installations, etc. Charles Haines is CNF chairn bers are B. E. Brazier, Thomas FitzPatrick, Alexander MacKintosh,

William M. Rice, Alfred Shaw, and Eric Pawley, AIA staff.



Dean Stane and Hugo Steccati, photographers

HEAVY ION ACCELERATOR BUILDING

University of California Radiation Laboratory*, Berkeley Corlett and Spackman, Architects

A clear example of the application of architectural principles to design of nuclear facilities, the Heavy Ion Accelerator Building is outstanding among accelerator buildings at research installations such as the University of California Radiation Laboratory. Concrete walls of tower end of building not only differentiate between function of "injector" located at that end of building, and accelerator which is behind steel panelled section, but act as shielding for any radiation from the injector

The list of elements in the periodic table has extended since 1940 from 92, uranium, to 101, mendelevium, latest of the synthetic elements. This building houses a linear accelerator of a new and special type designed to produce elements beyond mendelevium. The "bullets" to be used in "bombarding" heavy elements will be ions of nitrogen and

neighboring elements which will require very high energies to accelerate them to the speed at which their penetration of these elements will result in transmutation from one element to another.

The "Hilac" building's restricted hillside site was a considerable factor in its plan solution, but the real determinant was the use to which the machine will be put and the requirements that stem from that: tower space for injector; high bay space for accelerator; shielded area around its "useful" end; space for target and other research equipment; adjacent laboratory for chemical analysis of the short-lived elements expected; counting rooms for electronic devices to determine experimental results, especially with elements too short lived for chemical analysis; rooms for capacitors, transformers, etc.; cooling tower to keep machine, target, motors from overheating. John Sardis, structural engineer; James Gayner, mechanical engineer.

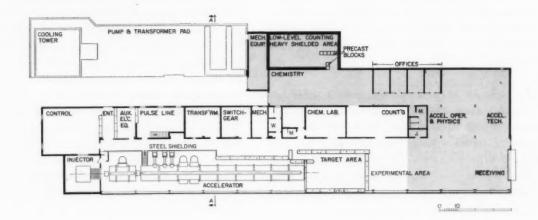
^{*}Operated under contract to U.S. Atomic Energy Commission

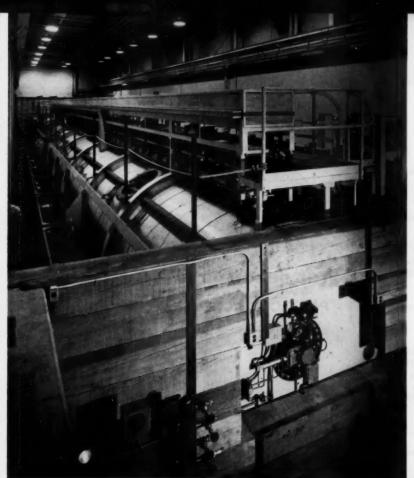




HEAVY ION ACCELERATOR BUILDING

Concrete panels, interlocked to trap radiation, form shielded target area or "cave" for experimental equipment. Entrance is through maze at right. Transformer pad and cooling tower, outside at rear, emphasize two inherent problems in accelerator building design: power and heat

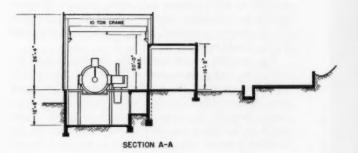


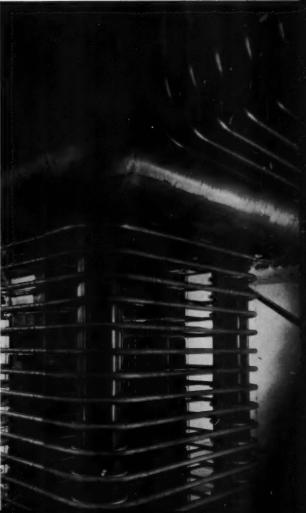






From center of machine's "useful" end, beam of fast-moving particles will emerge, directed to target containing thin film of element to be bombarded. Heavy timber shielding around beam opening absorbs slow neutrons, strongly radioactive uncharged particles. Control room (top, right) is center of all electronic equipment for machine and building. Lead glass window looks to injector room. Concrete wall, 8 ft high, 2 ft thick, protects corridor (center) from radiation. Steel plate shields at far end. Doors lead to chemistry lab and counting room where transmuted elements are analysed, and to power rooms. Floors are concrete or, near machine, steel grating; roof is steel deck. Aluminum-sheathed Cockcroft-Walton voltage multiplier acts also as ion source, injector; supplies power for arc to "strip" heavy element atoms of some of their electrons, making ions, then gives initial acceleration





ACCELERATOR TYPES

| ▶ Particle source | ped | | |
|--|---|-------------------------------------|----------------------------|
| Particle beam | Particles accelerated | Accelerating force | |
| Target Alternate target | 90 | ating | Guiding force |
| Vacuum chamber | rticle | selec | idin |
| High voltage terminal | Pa | Ac | ĕ |
| 80.038.4 00 | VAN DE GRAAFF | | |
| | Any charged particle | Electric (Static generator) | Electric |
| | COCKCROF | T-WALTON | |
| | Any charged particle | Electric (Voltage multiplier) | Electric |
| | ELECTRON | LINEAR ACC | ELERATOR |
| | Electrons | Electric | None |
| in the water the contract of t | PROTON LI | NEAR ACCEL | ERATOR |
| | Protons | Electric | Electric |
| | HEAVY ION | LINEAR AC | CELERATOR |
| | Heavy ions | Electric | Electric or Magnetic |
| | CYCLOTRO | N | |
| | Protons Doutsrons Alpha particles | Electric | Magnetic |
| | SYNCHROCYCLOTRON | | |
| | Protons | Electric | Manual |
| | Deuterons Alpha particles | (Frequency modulated) | Magnetic |
| | BETATRON | | |
| | Electrons | Magnetic | Magnetic |
| | ELECTRON SYNCHROTRON | | |
| | Electrons | Electric | Magnetic |
| | PROTON ST | NCHROTRO | 1 |
| | Protons | Electric | Magnetic |

Types of accelerators vary with particle to be accelerated and use of resulting beam. Size also caries, depending on energies needed for specific research. All types shown above are used in basic research, but Van de Graaff, linear and betatron accelerators are valuable in industry as well. Cockeroft-Walton and Van de Graaff are used either alone or as injectors, providing initial acceleration of particles for large machines like Berkeley Bevatron and Brookhaven Cosmotron which need particles already accelerated. Energy acquired by charged particles passing through electrical field is proportional to potential difference. In most circular machines (cyclotron, betatron, etc.) magnetic field is used to keep particles moving in circular path; linear accelerator uses alternating high frequency and free fields, usually has no magnet as particles normally more in straight line, producing concentrated beam

THE DESIGN OF PARTICLE ACCELERATOR BUILDINGS

By WILLIAM MAXWELL RICE, A.I.A.,

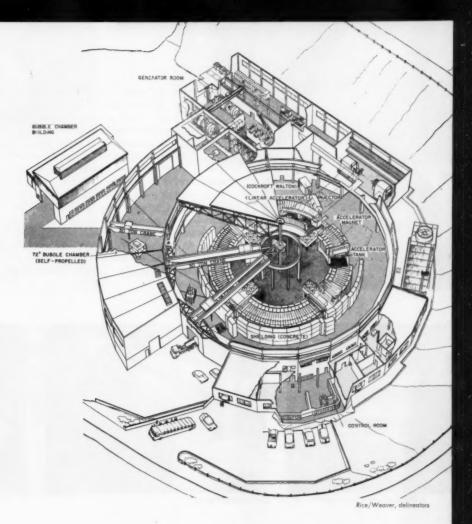
University of California Radiation Laboratory, and Member, Committee on Nuclear Facilities, A.I.A.

and ELISABETH KENDALL THOMPSON, Senior Associate Editor, Architectural Record

A MACHINE that can be operated to produce new elements, that can break up elements once thought indivisible and so probe that secret treasure-house of life itself, the nucleus, must inevitably be regarded as a thing of awe and mystery. For the layman, that is what the accelerator is, and indeed, a machine that can cause invisible bits of matter to course along its path at a rate of speed almost equal to that basic module of the universe, the speed of light, is an awesome thing.

In this nuclear world the architect, too, is a layman and so may be excused if in his wonder at the news of discovery of element after element, of unsuspected isotopes of new elements, or of the splintering off of new nuclear particles, he sometimes tends to impart to the buildings for these machines something of the awe he accords to the processes they make possible. Mesons, neutrinos, antimatter may confound him, but the reality of concrete and steel, brick and tile and the good earth, should reassure him.

For amazing as are the results obtainable with accelerators, and portentous as is the horizon which these machines open up, the buildings in which their work goes on are neither amazing nor awesome, nor is their design beyond the scope of today's architect — provided he is willing not only to inform himself on the building's special requirements but to acquaint himself



Bevatron, University of California Radiation Laboratory, Berkeley, a proton synchrotron producing energies up to 6.6 billion electron volts (hence name) is still world's largest operating accelerator. Building illustrates basic elements of design requirements in this field: space for machine and equipment using "beam"; generators; massive shielding (5 ft concrete blocks, stacked 15 ft high); "maze" entrance; multiple target areas; control and counting rooms; detecting equipment (cloud chamber or new "walking" bubble chamber for photographing particle tracks). Masten and Hurd, architects for original building; Milton Pflueger, architect for addition and bubble chamber building

fully and analytically with the needs and means, the wants and hopes, of the scientists and engineers who will operate the machine. The basic architectural premises — that a plan must function well, that a building should express its purpose, that its design is founded on the age-old truths of proportion, harmony, form and the rest — need to be applied with deep and very real understanding of the scientist's infinite curiosity and the intricate and highly imaginative ways in which he seeks to satisfy it, opening up as he does so the boundaries of knowledge for further exploration.

The majority of the mammoth machines in which the incredible becomes almost an everyday commonplace are located at universities or at research installations operated for the U. S. Atomic Energy Commission. The size and cost of these machines make it unlikely that very many of them or their buildings will be built; this kind of building will be an infrequent project for the architect. He will find, however, that accelerators are increasingly being applied to industrial processing, and for that reason he should know the basic principles of their design. Although the machines used in industry are a great deal smaller than those at national research laboratories, the essentials of architectural design are much the same in both, varying more in size and in number of facilities than in kind.

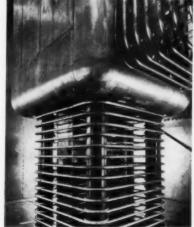
In most buildings housing machines there are people stationary, moving or intermittently present, and it is rare that these buildings are designed without human activities, motions and requirements as the module. The machine as we have known it has been a gregarious part of a moving, human scene. But the accelerator, by the very nature of the processes that go on within it and the products that emerge from it, is a lonely performer. Massive shielding must envelop it; human beings must avoid the radiation from it when it "works." No hands will touch it to adjust a valve while it is operating. Safely shielded from it, in an enclosed room, an operator will control every part of its action, and when it has completed its function, the results of its "work" will often be but a small amount of matter which, in all probability, no one will ever be able to see. Nevertheless, the human element is still a part of these buildings, though in a new and different equation which must be solved in a new and different way.

The paradox of so large a machine laboring to produce so infinitesimal a result, and of human beings, the most complex machines of all, depending on an electronic device to detect for them the precious bit of matter which their eyes cannot see and their hands dare not touch, has its parallel in the architectural world. For architecture is an art, but it is useful or it is not

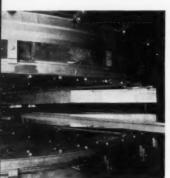


1 90-in. Cyclotron, UCRL (Livermore)

1. Cyclotron is "classic" particle accelerator of type based on use of electromagnetic circular field and repeated electrical "kick" at each revolution. Most are horizontal; vertical mount increases beam use. 2. Cockcroft-Walton is voltage-multiplier, ion source, accelerator; also used as injector for larger machines. 3, 4. Van de Graaff is modern version of classic static generator, useful in research and industry. Steel tank keeps machine under pressure. 5. Synchrocyclotron is like cyclotron but uses frequency modulation as compensation for particles' increase in mass. 6. Linear accelerator produces high intensity beam useful in research and industry. 7. Synchrotron uses only ring magnet, is basis for newest, largest accelerators like Cosmotron (8), Bevatron, p. 187, A. G. S. at Brookhaven, p. 190



A Hilar LICPL (Barkalay



Synchrocyclatron, UCRL (Berkeley)



6 Linac, UCRL (Berkeley)



7 Synchrotron, UCRL (Berkeley)

architecture; and without people to use its buildings, they become only empty shells.

What is an Accelerator?

When the first cyclotron was built it was popularly known as an "atom smasher," and though the term is not exactly correct in its connotation, it will give identity to the accelerator, for the cyclotron is one kind of accelerator. Like other machines, accelerators are of different sizes and shapes, depending on the kind of particle which they are to accelerate, but their common purpose is to impart literally astronomical speed to charged particles so that they will acquire sufficient energy to penetrate the atomic structure of an element and break it up into its components. When the particles have acquired enough energy, they are ejected as a "beam" - usually not visible, though sometimes one can be seen - which is directed toward a metal target plate on which is a thin film of the element to be "bombarded" (not "smashed") by the particles. What happens then cannot be seen by the eye, but the collisions ("stars" and "events") which take place can be graphically recorded by various means: the photographic emulsion, the cloud chamber, or the newest, the bubble chamber. These give pictures of the paths of the charged particles that have passed through these detectors.

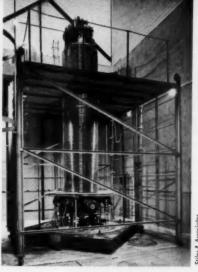
Electric signals picked up by the "counters" also evidence the effect of the beam on the target, or vice versa.

In the multiplicity of parts, in the electrical and mechanical services which it requires, the accelerator is a complex machine; but its operating principles are simple. Charged particles — electrons, protons, alpha particles, deuterons or other ions of heavier elements — travel at high velocities along a predetermined path through alternate regions of free and high frequency fields in a vacuum chamber, and are kept on this path by either an electric or a magnetic field. As the particle passes from the field-free region (in a linear accelerator this is in the "drift tube") to the high field region ("crosses the gap") it receives an accelerating "kick." (In betatrons acceleration is by electromotive force induced by a changing magnetic field in a ring-shaped vaccum tube.)

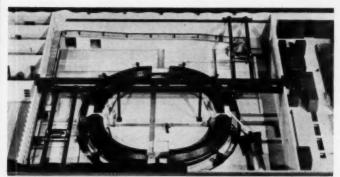
$E = mc^2$

The faster the particles move, the greater the energy they build up. The largest machines today are proton synchrotrons which are used to produce both "new particles," like mesons, antiprotons and antineutrons, and beams of protons in greater quantity and purer composition than those obtainable in cosmic rays. The F. W. Seiders





3, 4 Rice Institute High Voltage Laboratory



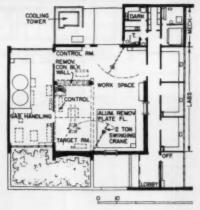
8 Brookhaven National Laboratory

6.6 Bev * Bevatron at the University of California Laboratory is the largest currently operating. But larger machines are being built or are in the plan stage. A 10 Bev accelerator of the Bevatron type is being completed in Russia; C.E.R.N. (European Council for Nuclear Research) in Switzerland and Brookhaven National Laboratory in New York are building 25 Bev accelerators, of an entirely new type called the alternating gradient synchrotron; and the Midwest Universities Research Association is planning an even larger one. The size of these machines is relative only to the energy that can be built up during acceleration; if the same energy can be got from a shorter path, the future will be in that direction; if it cannot, linear accelerators will get longer and longer (Stanford University has talked of a two-mile one), and circular ones will have ever greater diameters.

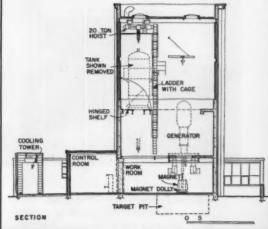
Protection From Invisible Radiation

These high velocities and consequent high energies are not, however, without their price. The radiation which emanates from the highly energized particles constitutes what is probably the single most awe-inspiring aspect of the accelerator building. For this radiation is a hazard





HIGH VOLTAGE LABORATORY, RICE INSTITUTE, HOUSTON, TEXAS. GEORGE F. PIERCE AND ABEL B. PIERCE, ARCHITECTS. Tower height was determined by height of 5.5 Mev Van de Graaff plus its steet tank cover, removable for access to machine. Walls act as shielding to second floor level. Brick finish is campus tradition

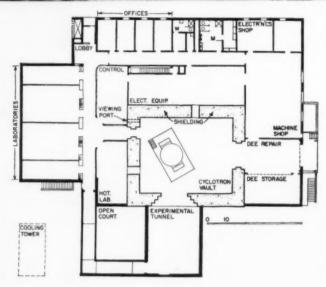




^{*} Billion electron volts; an electron volt is the energy acquired by an electron — or proton — as it goes through a one-volt potential difference.

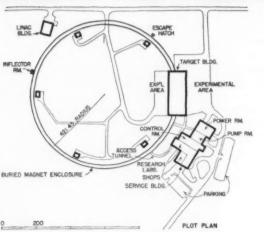


Charter R. Price

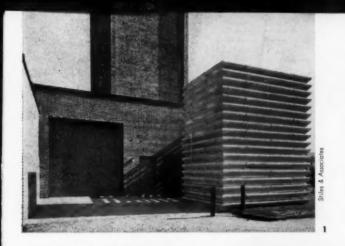


CYCLOTRON BUILDING, ARGONNE NATIONAL LABORATORY, LEMONT, ILL. VOORHEES, WALKER, SMITH & SMITH, ARCHITECTS. Argonne's cyclotron building is based on concept of shielding permanently in place and acting as part of structure (in contrast to flexibility of movable panels). Concrete walls 7-ft thick, ceiling 4-ft thick, floor, 18 in. thick, completely enclose cyclotron. Tunnel for experiments, in direct line of beam from machine, opens off cyclotron room and connects with laboratories so equipment can be moved in easily. Knockout panel on outside wall of tunnel, centered on beam's center line, will permit expansion if necessary. Thick window and "viewing port" provide visual connection between cyclotron room and adjoining control room and "hot" laboratory





ALTERNATING GRADIENT SYNCHROTRON, BROOKHAVEN NATIONAL LABORATORY, UPTON, NEW YORK, STONE AND WEBSTER ENGINEERING CORPORATION, ENGINEERS. This newest type of accelerator will accelerate protons to at least 25 Bev - a higher velocity than has been possible before in an annular magnet of unusually small cross section. Using alternate strongly converging and diverging magnetic fields, it will keep protons in a narrow track housed in a circular subterranean tunnel, 17 ft high by 18 ft wide, one half mile in circumference. Length of this track as well as design of the accelerator itself account for the experted high velocities and consequent energies to be produced in the particles. These tremendous energies will require unprecedented shielding; burying the magnet is an economical and effective way of providing this protection. Linear accelerator injector and target are in their own buildings outside magnet ring. With such a concept, architecture is implicit only in target and linac buildings and in site planning, but its impact could nevertheless be important



special needs in accelerator buildings 1. Cooling Towers: Magnels, with tremendous heat-producing coils, must be cooled by continually circulating non-conductive water (or by air). (Rice Institute cooling tower.) 2. Power Supply: Large amounts of electricity for generators, vacuum system, pumps, etc., imply early collaboration between architect, electrical engineer is essential to design solution. (Hilac pulse forming line.) 3. Shielding: Mass, density, distance are three main ways to protect from dangerous radiation around machine during operation. Suitable materials: concrete, lead, steel, earth, water, sand. (U.C.R.L. Synchrocyclotron.) 4. Space for Equipment: Biggest problem is providing enough space economically for machine and required research equipment. Analysing magnets, channels, inflector are just part of equipment needed to inject Cosmotron with protons generated by Van de Graaff at Brookhaven National Laboratory







2 UCRL (Berkeley)

of the first order and being invisible and cumulative, it is insidious. But it is far from being an unknown and unknowable hazard. Protection against it is not only possible in a variety of ways but is simple to effect. Accelerators, in this regard, have a distinct advantage over other nuclear machines: radiation stops when the machine is shut down.

Basically, all radiation is the release of energy, but some kinds of radiation are dangerous. All produce their effects through ionization — that is, normally neutral atoms are shorn by this released energy of one or more of their electrons and become unbalanced, a state in which they are called ions. Alpha particles (the nucleus of the helium atom) are too weak to penetrate deeply, but have strong ionizing abilities and are especially dangerous if inhaled or otherwise taken into the body. Beta particles are electrons; they penetrate deeper into living tissue than alpha particles but, like alphas, can be effectively stopped by a layer of clothing. In sufficient concentration, however, they can cause bad burns. Gamma rays are not particles; they are similar to X-rays and penetrate deeply, causing internal burns, illness and, with sufficient exposure, death.

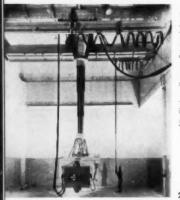
Protection against these radiations is afforded, first of all, by distance, but the impracticality of relying solely on this as a method of protection is obvious. Nevertheless, it has its place in the planning of a nuclear facility. The practical solution lies, for the present, at least, in more tangible means: the provision of barriers of sufficient density to stop the energetic particles in their precipitate tracks before they reach the area where they might do harm to living things.

For effectiveness, availability and relative inexpensiveness, the most universally used shielding material is concrete, either the ordinary 150-lb variety or the denser 200-lb "heavy" concrete with iron ore, steel scrap or barite aggregate, useful where beam intensity is particularly great. Water, earth and sand are less expensive but require greater bulk; lead and steel take up little space but are expensive. What material, how much and where it shall go are decided by the health physicist, health chemist (two new "watchdog" professions) and the scientists who will use the machine, on the basis of human occupancy of nearby areas.*

If the scientist were to be asked what he most wants in an accelerator building, he would probably say "Plenty of space that I can use in many ways." What

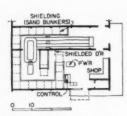
^{*} Shielding in industrial and commercial installations is subject to regulation in some states, Research installations are usually exempt provided they meet certain standards of control and monitoring. Bureau of Standards Handbooks 50, 55 and 60 give design recommendations for protection against radiation hazards.



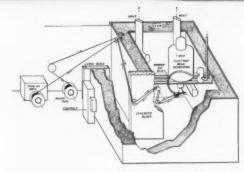




3 General Electric Company



5 Applied Radiation Ccrp., W. M. Rice, arch

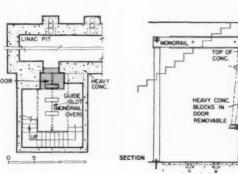


6 Sequoia Process Corporation

ACCELERATORS AT WORK IN THE PEACEFUL WORLD 1. Belatron detects flaws in machine parts, is basic industrial research tool. Allis-Chalmers lab is model installation, offers custom radiography. Crane in shielded bay (2), telescoping tube make machine's use flexible. Used medically, betatron is valuable cancer therapy aid. 3, 4. Food irradiation, still in research stage, has huge potential. 5. Small industrial installations are on increase: Applied Radiation Corp. plan shows conveyor belt for product irradiation (W. M. Rice, arch.), uses inexpensive sand shielding as does Sequoia Process Corp. (6) in irradiating plastic covering for electric cable. 7, 8. Industry's concern for radiation protection is evident in Varian Associates' 5-ft concrete plug door operated on monorail, and sunken linac pit (Michael A. Gallis, arch.)



4 U of C Medical Center, San Francisco



7, 8 Varian Assoc , Michael Gallis, arch.

those ways are he probably cannot say even during programming, but what he means is that the space for research in the building should be as big as the budget will allow, and as flexible in its use as the architect can make it. Change is the essence of research, and the ideal building, like the true scientist's mind, will be ready to accommodate anything that may happen in an experiment.

In a very real sense, however, the machine is the real determinant in the building concept, not as a machine but as a means by which an idea becomes reality. Without the machine, the experiment is only a hope and the idea but a formula. But the machine alone is not enough. Large as it may loom in the scientist's mind as the major item in the budget for the project, and undeniably important as it is, the machine without certain supporting facilities could not function to an over-all useful purpose.

The laboratories, so located that the chemical characteristics of the few atoms of a newly made element can be analysed with a minimum of delay; the counting rooms where electronic detectors verify the physical presence of invisible atoms—even before chemical analysis is made—and give the quantitative and qualitative data that are stepping stones to the future; control rooms, power supply rooms, technicians' shops,

cooling towers — these are all essential elements in the building's program.

The challenge to the architect lies only partially in analyzing the use of these various supporting facilities and resolving the relationships between them and the machine so that the parts, functioning as a whole, contribute subtly to the performance of each experiment. The further challenge lies in shaping an environment which is of, in and around the building and which will eloquently state, to those who use it and to those who only see it, that the purposes of science and the benefit of mankind are, in a peaceful world, inextricably linked.

What has been said of the research building has particular significance in the fields of commerce and industry, where the potential opportunity for the architect is greatest. If that potential is to be realized — as it could be — he will have to remind himself that "imagination without learning is like having wings and no feet." But clients — scientists, engineers, industrialists — must also remember this. If the architect's wings are sometimes bigger than his feet, the client's feet are often bigger than his wings.

Knowledge and imagination together were the source of the nuclear age. They both belong to its architectural interpretation.



Bogotá, Colombia

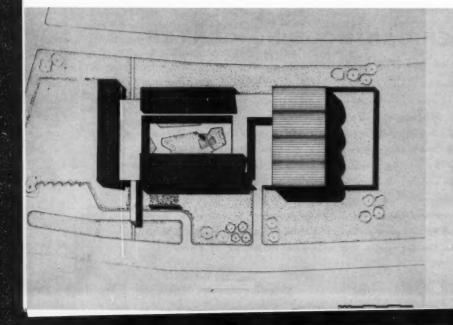
The Inter-American Housing Center (CINVA), a technical assistance project of the Organization of American States, was established in 1951. It is, we understand, the first institution in the world dedicated specifically to training, research, publications and consulting service in the housing field. Graduate students come from the 20 Latin American republics, from Puerto Rico and occasionally from other countries. The building was designed by the Center's staff, including Leonard J. Currie, A.I.A. (former Director of the Center, who acted as job captain), Guillermo de Roux of Panama (design). Celestino Sanudo of Chile (preliminaries), Herbert Ritter and Eduardo Mejia of Colombia (drawings and specifications). Engineers: Carlos Valencia and Jorge Arias de Greiff of Colombia; landscape design, Leonard J. Currie; builders, A. Manrique e Hijos, Manuel J. Uribe C., of Colombia. The description that follows was written by Mr. Currie

In the design of the building for the Inter-American Housing Center (CINVA) there were no problems. The architects created none. One might think that, in approaching the design of a building for a unique and international function, the loose association of architects from different countries and cultures might have settled for the latest interpretation of the international style, the allglass curtain wall, or possibly for some of the more national expressions with novel, large-scale plastic forms.

It is perhaps indicative of the maturity, self-assurance, and reasonableness of thought that has become the common norm of CINVA that everyone agreed from the outset upon a desirable character for a building to house an institution that advocates







- 1. Entrance
- 4. Director

- 7. Administration
- 8. Registrar 9. Lockers

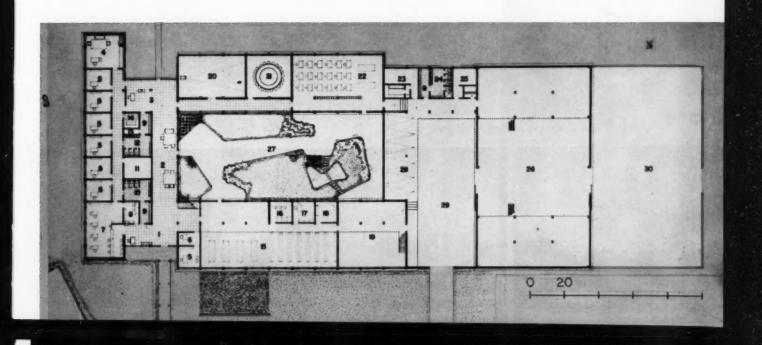
- 10. Restroom
- 11. Storage
- 13. Storage
- 14. Kitchen

- 17. Librarian
- Microfilm
- 19. Printing sh Lecture

- 22. Drafting
- 23. Photo laborator
- Watchman Construction lab
- Patio
- Service
- Experimental patio



View from the north; wall encloses the experimental patio; thin-shell vaults of sprayed-on concrete roof the construction laboratory, making possible a room 66 by 120 ft without interior columns. Across page, air view of National University campus showing location of Housing Center



simple, thoughtful, economical, durable solutions to problems of low-cost housing. It was understood from the beginning that there would be no striving for monumentality in either the pre-Giedion or post-Giedion sense of the word; that no design clichés would be permitted; that the building form would be simply determined by functional requirements, available materials and established building techniques, site and climate, convenience and non-assertive harmony.

Although much of CINVA's approach to housing is expressed in the architecture of its building, it should not be assumed that the forms that have evolved are those advocated by CINVA in the solution of specific housing problems. In truth CINVA, to the disappointment of those who seek ready-made solutions, has come forth with no pat architectural formulae for housing legislation, for financing, or for community organization. Rather, CINVA tries through its training program and its publications to develop a methodology out of which essentially local solutions result, forms that grow out of local traditions, local cultural patterns, local materials, and local climate.

The enclosing of a series of patios in conformity with Colombian Spanish Colonial tradition is not arbitrary romanticism, but rather a recognition of factors of climate and social problems that have changed little since Colonial times. The garden patio is a sheltered place to catch the limited sun of overly cool Bogotá. It is still prudent in Colombia to protect the service and experimental patios with high enclosing walls.

Although the site is only four degrees from the equator, the 8600-foot altitude of Bogotá places it in what is characterized as clima fria (cold climate), a region in which the sun is welcome throughout the year from virtually all points of the compass. To capture all available sun, the Center was designed with ample windows and rather close eaves just sufficient to protect the walls and windows from rain. The entrance pergola and the open-but-













Above, main entrance is from the east. Pergola built of guayacan (a hard tropical wood) and corrugated cement-asbestos sheet affords protection from heavy rains. Below, left to right, view from the north; west (secondary) entrance from students' dormitories; reception desk near office entrance; north entrance and exterior of library

covered connection to the construction laboratory exist because heavy downpours are frequent.

The site, on the campus of the National University, is of adequate size for the spread-out plan, which is essentially one-story with mezzanines in the library and construction laboratory. This permitted simple construction methods with a minimum of scaffolding or hoisting equipment. Since there is no central heating or air conditioning there is no compulsion for a compact plan.

Recognizing that roof leaks would be inevitable, the architects chose, wherever possible, simple monopitch roofs of corrugated cement-asbestos; with such roofs, leaks are less disastrous than with flat decks, and they are relatively easy to repair.

For over four centuries locally produced brick has been the predominant building material in Bogotá. In recent years the more pretentious buildings have had their brick walls clothed with stucco, paint, terrazzo, thin stone veneer, and even artificial stone imported from the United States. Needless to say, these cosmetic treatments increase initial costs and are calamitous from a maintenance viewpoint. With the knowledge that maintenance funds would be extremely limited, and faced with the example of the lack of maintenance of other buildings on the campus, CINVA's architects chose brick and glass for exterior walls, common clay tile for the floors, rough plaster interior walls, ceiling planks of wood fiber and cement. Exterior painting was limited to windows and doors.

The roof of the construction laboratory consists of four thin concrete shells, each spanning 30 ft by 66 ft, thus enclosing a space 66 ft by 120 ft without interior roof supports. This roof, a scant two inches of Gunite concrete, proved economical to build in a situation where material costs are high (and savings in materials are therefore paramount) and labor costs are low. Of course the architects had an experimental as well as an esthetic interest in the thin-shell roof; however, its form and structure are rational and practical.

Bottom row, left to right: classroom corridor with sun-screen formed by an open brick grill; looking southwest in garden patio; conference room staff and students in round-table discussion; stairs to library mezzanine; library (mezzanine contains student lounge and space for additional researchers' offices)









Left, garden patio, flags of nations comprising the Organization of American States; above, architects Mejia and Currie inspecting concrete placement on thin-shell roofs; below, simple concrete frame of the office wing









Those who work or study or visit in the building, or in the building complex, become gradually aware of being part of a pleasant, non-assertive environment, a convenient environment that does not impinge itself upon the consciousness but rather provides a neutral background for the development of the individual and his personality. For those who insist upon architectural labels, the CINVA building might be called "old shoe" architecture; it fits its wearers with comfort and it is quite unconcerned with modishness.

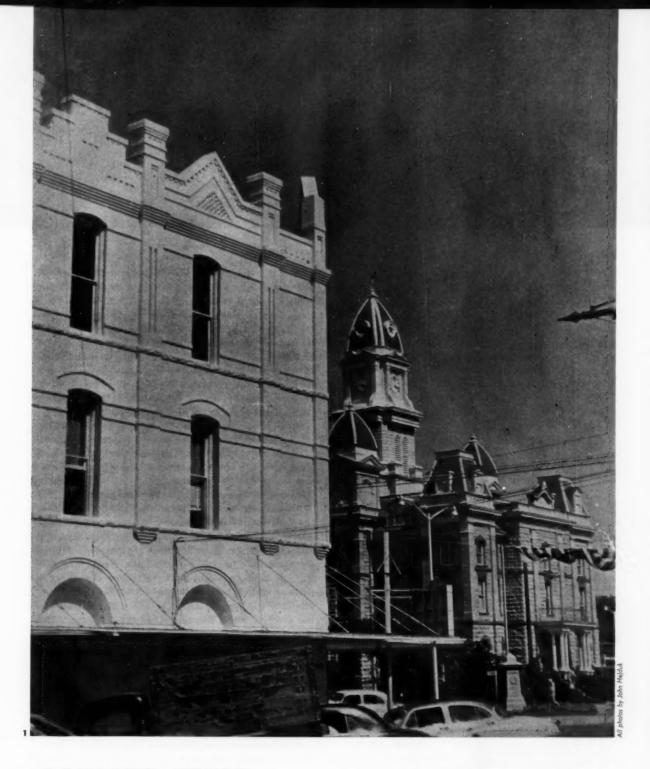


Interior, experimental construction laboratory with, left, a mock-up of a developmental design; rear, plumbing demonstration; foreground, split bamboo form for an "umbrella" roof. Below, left to right, architects Mejia, Currie, de Roux, and builder Martin. A report on the Center's work appears in this issue's "The Record Reports"







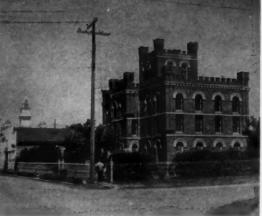


LOCKHART, TEXAS

By COLIN ROWE and JOHN HEJDUK

Somewhere or other Gertrude Stein says that certainly America is the oldest country in the world, and if it may be supposed that she was simply straining a paradox, there is a perceptiveness in her remark which travelers in the United States sooner or later come to recognize, although the observation itself is perhaps one which could only have been made by an American expatriate returning to the American West. Certainly it is there, where the strata of historical activity are so few and where time has contrived to erode so little of the little past that exists, that there will sometimes be experienced a feeling of inextinguishable antiquity.







- A. Courthouse (Figures 1, 2)
- B. Jail (Figure 3)
- C. First Christian Church (Figure 7)
- D. St. Mary's Church (Figures 8-10)
- E. Vogel Block (Figures 11, 12)
- F. Masur Block (Figures 12-18)

This is a quality which evades any immediate definition; but often in the sharp light and the vacant landscape of the West architectural detail will seem to achieve an almost archaic clarity, so that the most tawdry saloon or incrusted false façade may acquire a portentous distinction, while whole towns founded no earlier than the 'sixties can exude an Italian evidence of age. For these reasons, for the sympathetic traveler Utah will evoke memories of Tuscany; Virginia City, Nevada, will appear a 19th-century Urbino; while such mining cities as Leadville, Colorado, Carson City, Nevada, or Globe, Arizona, will seem as unquestionably as Gubbio or Siena to have always occupied the land. Like the cities of Umbria they are potent symbols of urbanity; and like these they become more definite, more surprisingly crystalline to the mind, by reason of the emptiness through which they are approached.

How much of the present susceptibility to these towns is merely nostalgic, how much is pure hallucination, and how much corresponds to a reality, it is difficult to judge. Their buildings are scarcely inhibited by either taste or culture, were improvised apparently without thought, seem to be the embodiment of a popular architectural consciousness, and present themselves to the eyes of the present day as the final and the comprehensive monuments of an heroic age. But although it is by qualities such as these that Miss Stein's proposition is given substance, one hesitates to exemplify it by them alone. These western mining settlements are after all too bizarre to prove a point. One recognizes in their buildings a peculiar combination of good sense and outrage, of force and naïveté; but one really demands that these characteristics be embodied in a more completely typical situation.

It is here that, as a quite stereotyped urban pattern, the American courthouse town might be introduced as a more representative illustration. A completely normal and widely distributed type, scattered throughout the northern states, consistently recurring throughout the South, it is scarcely the product of any deliberately expressed taste — and yet one assumes its repetition was inspired by more than mere habit. For patently this is a town dedicated to an idea, and its scheme is neither fortuitous nor whimsical. The theme of centralized courthouse in central square is — or should be — a banal one. And it is in fact one of great







power. For these courthouse squares are not the residential enclosures of England, nor like the piazzas of Italy do they admit the church in a presiding role. Here it is the law which assumes a public significance; and it is around the secular image of the law, like architectural illustrations of a political principle, that these towns revolve. In each case the courthouse is both visual focus and social guarantee; and in each square the reality of government made formally explicit provides the continuing assurance of order. There is hence a curious decorum about these towns which, however run down they might often be, are apt to display an air of generality. Urbanistic phenomena they palpably are, but they are also the emblems of a political theory. A purely architectural experience of their squares is therefore never possible. Within these enclosures the observer can never disentangle his aesthetic response from his reaction as a social animal. They are the foyers of a republican ceremonial, and their uncompromised form neatly condenses all the imponderables of republican principles. It is the almost classical typicality, the emblematic significance, and the completely adequate symbolism of these towns that is responsible for their seeming antiquity.

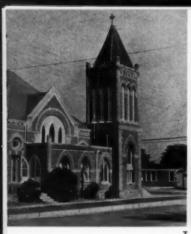
The place of origin of the type is presumably a matter of academic interest, but it is just possible that its place of culmination is in central Texas. There at least, since the comparative absence of trees disencumbers the scheme from camouflage, one can never be unaware of it. Further west the central courthouse seems scarcely to have been a viable motif; but in Texas, where the brilliance of the atmosphere lifts the most modest architectural statement to a new potential, the *idea* becomes completely clarified; and for the unprejudiced eye, the eye which is willing to see, a number of small towns do present themselves as very minor triumphs of urbanity.

Llano, Lampasas, Gainesville, Belton, Georgetown, Lockhart, and others are all as much the same as so many French medieval bastides. If it is not the sight of a water tower, the first indication of arrival at one of them is apt to be the courthouse which appears, from a distance of several miles, as the slightest eruption upon the horizon. Without major incident the land-scape has unrolled itself for mile after mile with an almost complete negation of picturesque effect. Ad-

mirable, uncompromising, repetitive, restrained, monotonous, subtle, and unvaried, it is a scenically underfurnished and magnificently exhausting display which makes the minimum of overtures to the spectator. Without natural punctuation and without natural relief, it debilitates the eye; so that as an artificial caesura in an endlessly continued scheme the distant view of the courthouse acquires a peculiar significance. It is like a ship seen in mid-ocean — an evidence of amenity, and a kind of monumental magnet which seems to impose progressive intricacy as the town is approached.

As a form of emotional complement to the interminable terrain, the impact of these four-square, geometrical, concentric little towns is discovered to be one of remarkable intensity. They have, all of them, something of the unqualified decisiveness, the diagrammatic coherence of architectural models; and scrupulously regular, they appear, almost more than real towns, to be small cities in primitive paintings. Something of their interest derives from their conformity, but within the accepted pattern innumerable variations are to be found. In one town brick will predominate, in another stone or stucco; in one place taste will be meager, in another elaborate; but in all of these places, as a common denominator of experience, there will be felt a dislocation of the sense of time. The buildings by which one is surrounded will appear to be ageless; while the insistently repeated courthouse and square will unavoidably suggest some Renaissance exercise to demonstrate the ideal significance of perspective.

As a representative of these towns at their best one might select Lockhart, whose exuberant, more than usually brilliant courthouse is apt to suggest that some provincial disciple of Richard Morris Hunt's had discovered the irresistible fascination of Leonardo's studies for domical buildings (Figures 1, 2). The first view of the town affords the characteristic visual competition. In approaching from the south the dominant intricacies of courthouse silhouette struggle for attention with the aluminum painted spheroid of the water tower; and a concentration of interest upon either is further disturbed by the appearance to the right of a small castellated building of curiously Vanbrughian profile. A toy fort, brick and machicolated, partly Romanesque and partly Italianate, evidently







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9, 10

the jail, its disarming self-assurance sets the mood for the entire town (Figure 3).

As a preface to the architectural promenade of Lockhart this little jail house could not be more appropriate, and as one is led imperatively from it towards the square it becomes apparent that expectations have not been raised too high. The courthouse is aggressive, bluff, and reasonably florid; the square itself is a more discreet combination of stucco, white paint, and Indian red brick, with here and there an intruding cast-iron column supplying a certain imported and Corinthian elegance. However, as one recovers from the shock of the square's central ornament, it becomes apparent that some of these miror buildings are not in themselves undemonstrative, and the presence of an interrupted staccato of distinctly assertive structures imposed upon the generally recessive background gradually becomes evident. It is particularly along the north and west sides of the square that these more individualistic buildings are concentrated (Figures 4, 6), and especially at the junction of these two sides that the presence of three white-painted gables of unequal height and width soon demands attention (Figure 5).

From this northwest angle of the square another phase of Lockhart's architectural evolution is revealed. A short block lined by small commercial buildings leads to a church tower some 300 feet away. The First Christian Church to which it belongs is as miniscule as the jail (Figure 7). An ecclesiastical representative of the Richardsonian suburban world of the 'eighties, dating from 1898, like the buildings in the square, it seems to have been put together from the standard elements provided by a box of bricks. But the First Christian Church is scarcely able to detain the observer, since three blocks down the street another disposition of church and spire presents itself.

This is St. Mary's, a product of Irish and German Catholicism, a building of orange brickwork relieved by brick of a yellow or deeper red and occasionally checkered, as for instance in the tower, with a pattern of greenish gray headers (Figures 8, 9, 10). St. Mary's is not so ambitious a building as the other; but its details are less ambiguous and more delicate, its modeling confident and distinguished, its Gothic both lyrical and strangely firm, with something of the economy of a child's drawing of a church. It is with shock that





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one discovers St. Mary's to have been erected in 1918.

The common sense of metropolitan time is severely jolted by this improbable fact. That this diminutive monument of unassuming piety should be nine years younger than the Robie House, should post-date Gropius' Werkbund Building by four years, imposes a sober curiosity which leads one to examine with deference the buildings already passed by. These, the structures immediately preceding the First Christian Church, are the Vogel Block to the south of the street and the Masur Buildings to the north. The Vogel Block is the first to demand attention (Figures 11, 12). Dated 1908, invested by the heavy frieze-like elaboration of its roof trim with a majestic seriousness, almost a floating prism, it seems to stand in a transitional relationship between the buildings in the square and those across the street. An awareness of a single volume, a sense of the horizontal, and a feeling for the significance of the structural bay are all emergent in the Vogel Block. In the Masur Buildings they have come to control the entire design (Figures 13 through 18).

The Masur Buildings (extending also along the adjacent streets) (Figure 13) represent the ultimate achievement in the commercial architecture of Lockhart. Erected at a variety of dates down to 1918, except for the Jo Masur Building (Figures 14, 15, 16) they are more avowedly utilitarian than would earlier have been thought proper, and also more classical. In them the episodic detail which characterizes the square is no longer tolerated, the roof incident which still survives in the Vogel Block is suppressed, and the only interruption of their regular silhouettes is provided by the chunks of brickwork which form a capping to the thin pilaster strips of their façades. The three buildings across the street from the Vogel Block are large, simple, and distinct units (Figures 14 through 18). Linked by one-story elements, they read as a scheme of independent and varied pavilions, all manifesting the new ideal of congruity, which is now seen to acquire a decisive expression in the last of the series, the Jo Masur Building. There, subordinated to a controlling grid of string courses and pilasters, in simplified, almost abstracted, form, arches and all the acceptable components of a classical design are fused into a single statement of surprising intensity.

This three-floor hardware store, with all the con-

sequence of a small-town Italian palace, and the more fantastic Vogel Block confront each other across the street with a certain defiant individuality. The First Christian Church occupies another corner. The Catholic church is still in sight. And turning around, the perspective of the earlier buildings and of the north side of the square almost completes a survey of a series of apparently related structures. It is not necessary to itemize their resemblances. They are in themselves a convincing argument of their relationship; and standing between them, their intrinsic reasonableness, their authenticity, their unsophisticated strength, even their obvious weakness cause one automatically to presume the existence of some pronounced artistic personality, some architect, or more probably, since this is not architects' architecture, some builder. This personality rapidly takes shape, an unknown but not an indefinite figure, a master builder, a Master of Lockhart, whom one equips with the attributes one feels he should possess — an unsubverted integrity, an innate capacity, tastes which are uncomplicated and definite, an understanding of necessity. And for some moments - so strong is the light and so extreme the heat - the Master of Lockhart remains completely plausible.

But stubbornly, this ideally anonymous, quasimedieval character whom one has educed refuses to take shape. The Master of Lockhart resists formulation as a myth. Indeed, was there one or were there several Masters? Was the architect of the Catholic church also the architect of the Jo Masur Building? Was the same man responsible for the Vogel Block and the jail? Apparently such questions are surprisingly difficult to satisfy and perhaps also they are irrelevant, because presumably it is the eternal problem of primitive art rather than the eternal problem of personality which is raised by these very recent buildings. They are structures which personally one finds deeply satisfactory; and yet, with any conviction, one cannot attribute to their designer a developed or a conscious aesthetic intention, and certainly not the intention to produce the results of which one is most deeply appreciative. Seen dispassionately, these buildings are utilitarian structures casually enlivened by an elementary eclectic symbolism, deriving something of their effect from concentration and material uniformity. But it is now impossible and meaningless to dismiss them as this





14 15

alone: in terms of a not unduly sentimental taste they have intrinsic virtues of a high order, while only too obviously their extrinsic attributes are even more telling.

Forty years ago, when the majority of them were new and some were still unbuilt, it was such a town as Lockhart that reduced the heroine of Main Street to an intolerable distress. "It was not only the unsparing, unapologetic ugliness and rigid straightness" which overwhelmed her, nor the fact that "in all the town not one building save the Ionic bank" gave pleasure to her eyes; but it was buildings "crowned with battlements and pyramids of brick capped with red sandstone" which really promoted her dismay, and it was in place of these that "she saw a new Georgian town as graceful and beloved as Annapolis . . . or Alexandria." "She saw in Gopher Prairie," Lewis tells us, "a Georgian city hall, warm brick walls with white shutters, a fanlight, a wide hall and curving stair. She saw it as the common home and inspiration not only of the town but of the county about"; and it was by fantasies such as these that she softened for herself the too harsh reality of a country which aspired "to succeed to Victorian England as the chief mediocrity of the world."

In the years that have intervened the neo-Georgian dream has receded, and as Victorian England has become less mediocre, so 19th-century America has become less abrasive. For many observers its towns have not yet become "as graceful and beloved as Annapolis," but their "rigid straightness" at least has become a positive value; while "their battlements and pyramids of brick" have become even more evocative than their English equivalents. They are now the indications of a self-consciousness as yet unimpaired by sophisticated inferiority or doubt, the distinguishing marks of a form of post-frontier architecture. It is a guileless architecture which, because innocent, is often apparently venerable; and which, because one may believe it to be uncorrupted, is sometimes curiously eloquent. When, as at Lockhart, it is combined with a city plan as entirely legitimate as that of the courthouse town; when, as there, a spontaneous and comprehensible architecture flourishes in a complementary relationship with a principle of authority; then we are in the presence, not of an amusing specimen of Americana, but of an exemplary urbanistic success whose meaning has been for too long obscured.







16, 17, 18



Ben Schaall

1. FOR A FAMILY OF TWO IN DANBURY

Residence of Mr. and Mrs. Bernhard Stern Herbert Beckhard, Architect

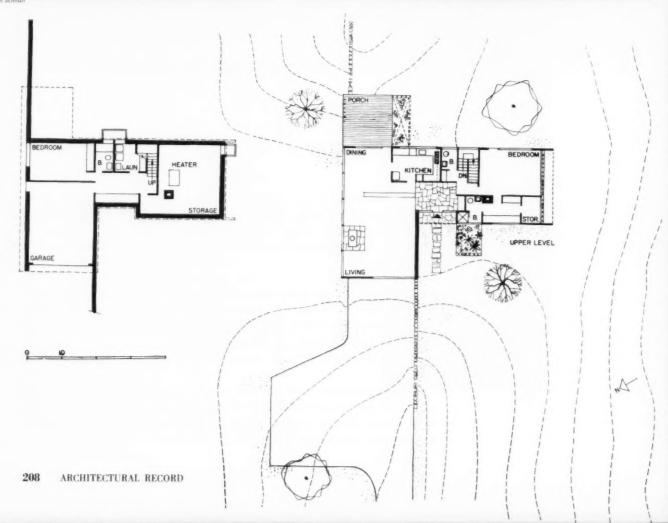
At first glance this house seems small and unassuming; a second look, however, reveals such fine exterior detailing that an interior of unusual interest is immediately suspected. And it exists, too, as the photos on the next two pages show. It exists in the selection of materials, the cabinet work, the lighting, and above all in the very workable plan for a family of only two.

The house was planned for a childless couple and a very occasional guest. Hence the one bedroom on the upper level and the guest room on the lower level where it can be closed off when not needed. The main view is to the north, and on that side the natural slope of the land was used to widen the upper level view and to bring the guest room above grade facing the view. The site is large enough to ensure privacy on all sides.

Despite its simplicity, the house is, as the architect points out, "rather luxurious, with two and a half baths (ceramic or mosaic tile walls), a separate dressing room for the master bedroom, a large living room, and good sized entry done in flagstones, double garage with electrically operated overhead door."



R--- 5-4---1











FOR A FAMILY OF TWO

House is full of pleasant contrasts: the openness of living-dining area and the privacy of master bedroom, for example, or the bulkiness of living room fireplace and the all-glass wall behind it. Dining area is almost completely shut off from entry and living room by specially designed storage unit. Kitchen, small and compact at owners' request, serves easily to porch as well as dining and living rooms. Porch is open on three sides, "does fine job of capturing even the smallest air movement," the architect reports, "and is consequently a cool breezy spot even on the hottest of days." Exterior walls combine local fieldstone, cedar and plywood, with bright color accents of yellow and vermilion on the plywood panels under windows. Interior walls are painted gypsum board, floors are oak, slate or cork on upper level, asphalt tile on lower. Glass areas on north side are all double-pane



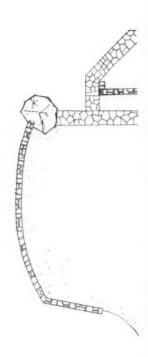
Louis Rooms

2. FOR A FAMILY OF FIVE IN NORTH STAMFORD

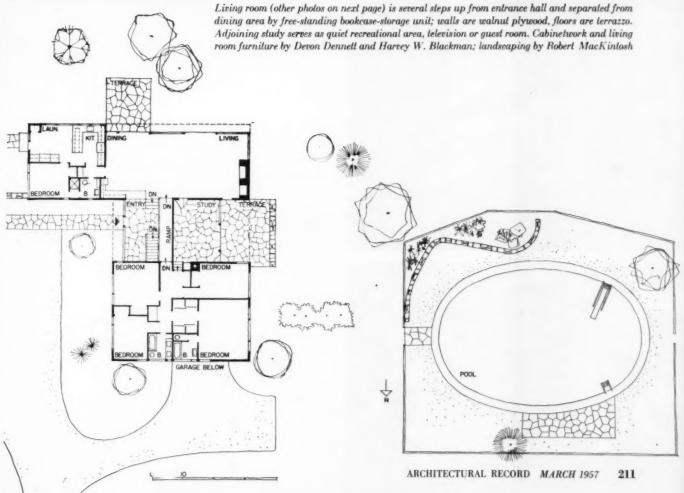
Residence of Mr. and Mrs. George Goldberg Huson Jackson, Architect H. Seymour Howard Jr. and Harold Edelman, Associates

Clean lines and the warmth of cypress siding give a quiet elegance to the exterior of this large house and pleasantly minimize its size. There is no hint from the broad motor court at the front of the depth of the building or of the lavish pool area to the rear. The sile has been skillfully used by both architects and landscape architect to achieve a notable sense of serenity and privacy.

Unlike the house shown on the preceding three pages, this one was designed for a couple with three children and a maid. Here again, however, is the sloping site so typical of Connecticut — dropping off sharply to the north in this instance, and used to place the garage and utility room beneath a slightly raised bedroom wing. The living-dining-kitchen wing and the study are at the grade of the knoll south of the house and have adjacent outdoor terraces; the bedroom area is isolated from the living room by the entrance hall and study to permit the parents to entertain without disturbing the children. All main living areas are oriented and glazed to take advantage of solar heat in the winter and are protected from the summer sun by overhangs and outdoor shades.















FOR A FAMILY OF FIVE

Bedroom area over garage, living room wing and garage can all be reached directly from entrance hall from which steps lead up or down to the various levels; flooring here is fieldstone. Dining room overlooks entry, has built-in grill, generous counter and storage space. Interior wall surfaces are either walnut plywood or plaster, sandfinished and generally left unpainted; flooring except for entry and living-dining area is cork or linoleum, ceilings are sand-finished plaster, unpainted. All lights are on dimmers and all glass is double-pane. Foundation is rubble stone, framing is 2 by 4 studs. Sun control is provided by overhangs and exterior bamboo blinds, thermal insulation by glass wool blankets. Furnishings in living room, dining room and study and cabinets in children's bedrooms were selected or designed by the architects, who also planned swimming pool and its terraces

EAGLE ROCK CLUB HOUSE

Richard J. Neutra, Architect

Dion Neutra & John Blanton, Collaborators





THE EAGLE ROCK PLAYGROUND CLUB HOUSE

This club-house building — winner of a national A.I.A. award — is readily adaptable to varied uses; a quality indeed basic to the very nature of its function. Its architecture holds considerable intellectual appeal; spatial and structural interest, fine proportion, carefully studied detail, a consistent and appropriate rhythm. Interpretatively, the architect apparently conceived the building as a neutral background for play, since the architecture itself conveys little sense of the light-heartedness of its purpose.

The setting strongly influenced the scheme, which is essentially a three-sided pavilion, openable at will. To

the north the hillside climbs slowly upward; to the south and east the ground falls off into ravines. Along its east and west sides the large central play hall was given vertical lift walls which, open, extend the volume out underneath and beyond the broad overhangs. On the east side (photo above) there is an outdoor play terrace which is unhampered by posts, since the roof here is hung from the cantilevered beam ends above.

At the north end of the building, the raised recital platform opens through over an outdoor reflecting pool to the hillside slope, thus creating an amphitheater or the alternate opportunity to utilize both indoor and outdoor seating for theater in the round.



Built for

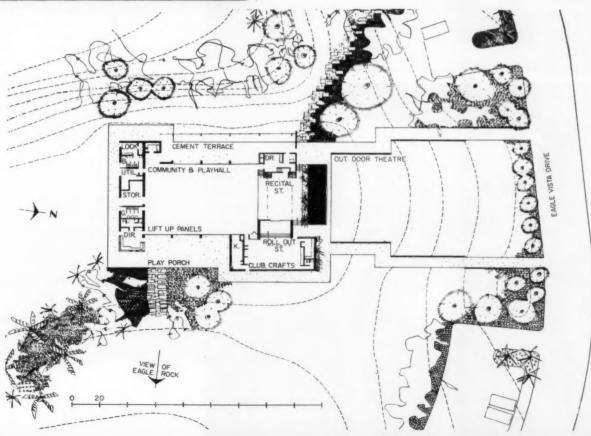
The Department of Recreation and Parks

Los Angeles, California

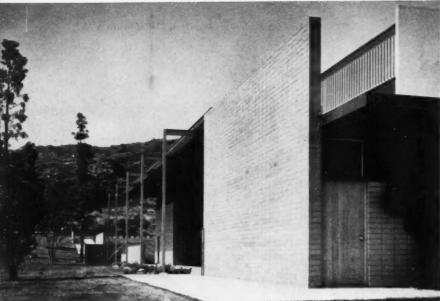
George Hjelte, Manager

Richard J. Neutra, Architect

Dion Neutra and John Blanton, Collaborators







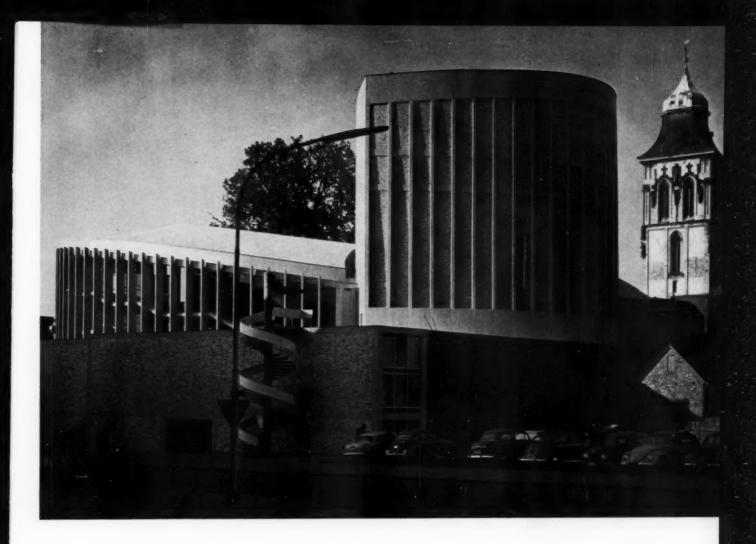


EAGLE ROCK CLUB HOUSE

Exterior colors and materials act as an effective foil to the green of the surrounding park. The masonry is red brick; the exposed structural sleel is painted aluminum, the steel deck soffils dark brown, the plaster white. Aluminum louvers serve both for sun control and decoration.

The sides of the main interior space - the community hall consist of vertical lift doors faced with natural finish Douglas fir. The vertical tongue and groove boards tend to minimize the joints between fixed and movable portions of the wall. When the doors are lowered they form an attractive, continuous wainscot possessing considerable resistance to impact and scuffing. The ceiling panels are faced with acoustic tile; the upper wall and sash are painted dark brown; the playing floor is maple.

For the interior, the colors are predominantly rust, gray, yellow, brown and green. Except for the large room, floors are of asphalt tile and walls of painted plaster



A MUCH DISCUSSED THEATER DESIGN



New City Theater, Münster, Germany

Architect Team: Harald Deilmann

M-Cl. von Hausen

Ortwin Rave

Werner Ruhnau

Consultants: Stage technique,

Adolf Zotzmann

Structure, E. Knoche

Acoustics, E. Meyer

Heating and

Air Conditioning,

A. Popp

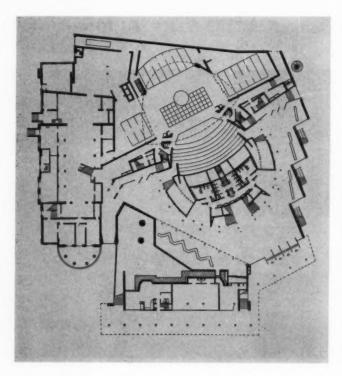
Electrical, H. Hancke



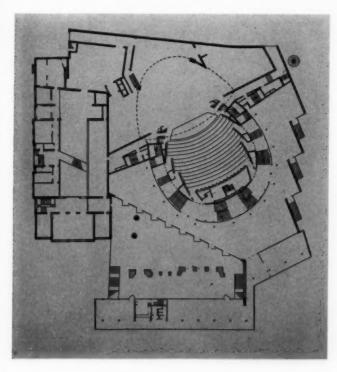
CITY THEATER, MUNSTER

This New City theater, talked about over Europe as a pace setter, departs from the traditional in concept as well as styling. The first new theater in many a day in Germany, it is widely observed as the significant statement of architectural thought, building technology, city planning trends, and theater theories of presentation.

Taking the last first, it is an approach to the theater-in-the-round but not a commitment to a single type of production. Thus it permits widely different stagings, but contributes to all an increased







Sile at the corner of two heavy-traffic streets was freely but intensively developed to provide many spaces for social activities in connection with theater-going — restaurant, patio, large foyers and smoking rooms — also to create a theater which contributes in many ways to the life of the city

sense of contact between stage and audience, a heightened feeling of participation, a "democratic theater community." It is larger than the typical dramatic theater, smaller than an opera house.

Plan-wise, this concept finds expression in large foyer areas both indoors and out, smoking rooms, restaurant and a generally outward look, all calculated to encourage a conversational, social attitude about theater-going. An ancient ruin, a section of wall from a famous castle, was placed in the enclosed patio, no doubt as a conversation piece.

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CITY THEATER, MUNSTER

The latter touch at least expresses the determination of the city and the architects to make the theater a participating member of its community. It was to take due account of its neighbors, not by compromising design convictions but by maintaining certain community manners. It has been criticized, we are told, for being too gay, too colorful, but it is doubtful if the local citizenry does anything but approve its contributions in this direction.

Perhaps on this side of the Atlantic the bold and







Visual ceiling of theater auditorium is a sea of 1200 small individual lights, each with wire wheel above; true ceiling is higher, for acoustical reasons. Walls are dead black, as a background for gay dresses; seats are intense violet, steel tubes painted white and black.

rather Baroque handling of masses would be the subject of more comment than on the other side, or maybe this is the focus of the too-gay criticism. There is no point in digging up dogma to explain the forms, or citing some fancied structural dictation. The forms no doubt were suggested by the spaces of the theater, but certainly there could have been other expressions. Perhaps it is worth suggesting that in Europe there would be no such need for explanation, or for any comment at all.



CITY THEATER MUNSTER

The fun-with-lamps idea extends to the restaurant as well as the theater auditorium. And, as shown by the photograph above, the basket weave motif progresses nicely to draperies and to wire chairs, or maybe it is vice versa. The restaurant as part of the theater is a very deliberate effort to give "the theater" an outward character, to heighten a feeling of social participation in connection with theater events



WAINWRIGHT BUILDING, St. Louis

CARSON PIRIE SCOTT STORE, Chicago

ROCKEFELLER CENTER BUILDINGS, New York Reinhard & Helmolater; Corbett, Harrison

LEVER HOUSE, New York Studmore, Owines & Merelli

TRINITY CHURCH, Section

PHILADELPHIA SAVINGS FUND SOCIETY BUILDING, Philadelphia

GENERAL MOTORS TECHNICAL CENTER, Detroit

LAKE SHORE DRIVE APARTMENTS, Chicago

S. C. JOHNSON & SON, INC., ADMIN. BLDG., Resimple Frank Llayd Wright

MONADNOCK BLOCK, Chisage Burnham & Root

DAILY NEWS BUILDING, New York Head & Hawells

IVA NORRIS DAM & POWER HOUSE, Tennessee

BOSTON PUBLIC LIBRARY, Resten McKim, Mass & White

STOCK PAVILION, Pulling Newight & Deitrick

CHRISTIAN SCIENCE CHURCH, Berkeley Bernard Maybeak

WOOLWORTH BUILDING, New York Cass Gibbers

GROW ISLAND SCHOOL, Hillnots Searings & Searings, with Porkins, Wheeler & Will

MANUFACTURERS TRUST BUILDING, Now York Skidmore, Owings & Merrill

UNITY CHURCH, Oak Park

NEBRASKA STATE CAPITOL, Lincoln

S. C. JOHNSON & SON, INC.; LASORATORY, Recinc

UNITED NATIONS SECRETARIAT, New York
Wallace K. Harrison & Consultants

LINCOLN MEMORIAL, Washington Honry Essen

Eoro Searlmon

EQUITABLE BUILDING, Portland

Pietro Belluschi ALLEGHENY COUNTY BUILDINGS, Pictober

UNIVERSITY CLUB, New York McKim, Moad & White

CRANBROOM ECHOOLS, Michigan Eliol Sparingen

MINERALS & METALS RESEARCH BLDG., 1 I.T., Chien, Mics van der Roho

ALCOA BUILDING, Pittsburgh

MUSEUM OF MODERN ART, New York Goodwin & Stone

MoKim, Meed & White

Richard Neutra
DODGE TRUCK PLANT, Detroit

100 MEMORIAL DRIVE APARTMENTS, Combridge

CENTRAL LUTHERAN CHURCH, Portland

HOUSES

F. C. ROBIE, Chicago Frank Lloyd Wright

E. J. KAUFMANN, Pennsylvenil Frank Lleyd Wright

FRUNK Lloyd Wright

HERRY VILLARD, New York Markim, Mand & White

H. H. Richardson

Frank Lloyd Weight
W. W. WILLITTS, Illinois

Frank Lloyd Wright

D. R. GAMBLE, President

PHILIP JOHNSON, New Canson

WALKER GUEST HOUSE, Florida Paul Rudolph

LLEN SCRIPPS, Le Jelle Irving Gill

Harwell Hamilton Harris

LOVELL "REALTH HOUSE", Los Angeles Richard Noutra

ONE HUNDRED YEARS OF SIGNIFICANT BUILDING

10: INSTITUTIONS

The fifty buildings nominated by Architectural Record's panel as "most significant in the past one hundred years" have divided themselves, generally, into convenient installments according to building type. Although the museum, club, and library grouped here as "institutions" share few specific functions, there is even among these three buildings a considerable common denominator.

In their general form all are descendants—although at clearly different removes—of the renaissance palace. All conceal the number of their principal stories and depend heavily on that concealment to achieve the major ingredient of their common success: good scale.

The great office of McKim, Mead & White — represented with four buildings in this total series — was almost always able to resolve the differences between direct and conditioned responses to size in such a way as to avoid the grotesque and achieve the grand and the gracious.

A long generation later the Museum of Modern Art — in the skilled hands of Philip Goodwin and Edward Stone — responded no less sensitively and with necessarily more courage to an array of conditioning phenomena inevitably eroded and remolded. Even those who could not feel it at the time of its building must surely acknowledge this work both prophetic and expert.

It offered for many their first thorough experience of a thorough-going modern public building. For almost twenty years a trip to New York has included a visit to the museum, where the building itself was often its own best and most carefully studied exhibit.

Just so was its University Club neighbor admired and studied and, in its time, the library in Boston. All had — and have — many lessons to teach; none more significant than the importance of scale.

Boston Public Library, 1888-95, McKim, Mead & White. (Tied for tenth)

"The Boston Public Library has especial significance in the history of American architecture because it marks the dawning of a renascence in taste, a taste which had the capacity to understand the past and use the language of the past with sincerity to give expression to the modern need for the beautiful. The Richardsonian arch had been abused by inept imitators. McKim made use of the arch that had been so well and so differently used by Richardson in Trinity Church across Copley Square. He followed the arrangement of the arch as it had been applied in the Library of Sainte-Genevieve in Paris, but he gave his composition for the library a greater freshness and a richness of detail and refinement that far outshone the prototype.

McKim refrained from using the then popular classic columns on the exterior, yet used them skillfully to give scale to the grand staircase which led up to the long reading room that ran across the front on the second floor. Both column and arch were used to give intimate and humane scale to the lovely interior court which was intended to be dominated by the joyous abandon of 'MacMonnies' Bacchante,' but which the prudery of Boston of the early 20th century was not yet able to understand."

Arthur C. Holden

"The Sainte-Genevieve Library in Paris gave McKim, Mead & White motive for the Boston Public Library. McKim took the pattern and with his skill built its theme into a much greater building. He and his partners, realizing the importance in position and purpose of the library, unselfishly urged the creation of a building which would be outstanding not only because of its architecture but because of its combination with the work of foremost artists and sculptors.

The architects felt, as all fine architects strive to feel, that no sense of unaided personal achievement exceeds satisfaction in knowing that they have created an everlasting monument by collaboration with others, even though their own personal glory may be somewhat dimmed. It is the joy, not of acclaim, but of creation."

Edwin Bateman Morris



Joseph W. Molitor



Joseph W. Molitar

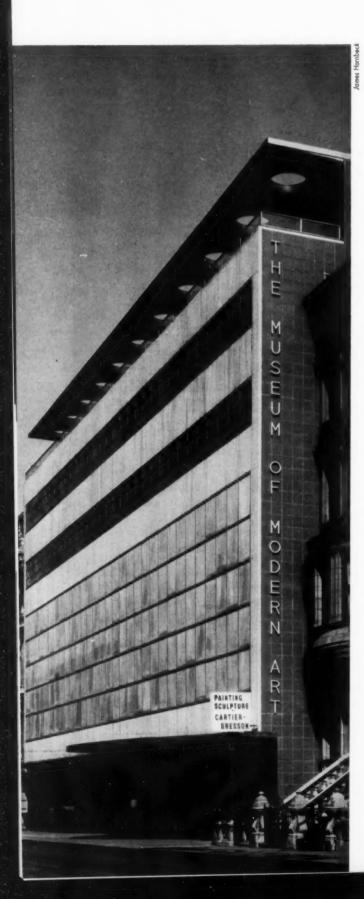
University Club, New York, 1900, McKim, Mead & White. (Tied for seventeenth)

"It has been said that the genius of McKim, Mead & White was only great enough to make reasonable facsimiles of other buildings. But their skill and good taste stepped up the charms of the originals, and made greater architecture.

The University Club stemmed from the strong simplicity of the Strozzi Palace. Its design adroitly adapts the great masonry expanse in the Strozzi from window heads of one story to sills of the story above, which expressed vault construction, into additional stories, beautifully worked into the facade.

Straightforwardness and well-placed ornament offer this building elegance combined with simplicity, which give it a claim as enduring architecture." Edwin Bateman Morris " 'An Italian palace on the outside, but better than any in Italy, with two atriums better than any in Pompeii, a library modeled on that of the Vatican, but better, and its dining room greater than any English great hall, it is undoubtedly the finest building in the world!' — the hyperbole of a French visitor quoted by Royal Cortissoz has considerable justification. The plans, elevations, and interiors are as fine in fact as on paper, and, like the Villard houses, the best artists and artisans were employed for their fulfillment. A period piece in the grand manner, it should be presented and admired forever."

Edward Steese



Museum of Modern Art, New York, 1939, Philip L. Goodwin and Edward D. Stone. (Nineteenth)

"The afflatus of the Museum of Modern Art lies, it seems to me, in the influence of its basic approach beyond even its handsome realization. For this building — designed almost twenty years ago — shattered the sacrosanct concept of the valhöll museum where one must be bulldozed into submission by the monument before reaching even the front door. Philip Goodwin and Edward Stone sought no monument here: the Museum of Modern Art was to assert art, not itself. Yet this it does with such an enticing graciousness that the architecture alone has played no small part in the growing art awareness of America today. For this was the first museum to make art both easy to attain and exciting to enjoy."

G. E. Kidder Smith

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BUILDING TYPES

STUDY 244

14 88

A REVIEW OF THE NEW SKYSCRAPER

by James S. Hornbeck

Pausing amidst today's feverish office building boom to consider the nature of the new towers that are climbing skywards in every city, one is inevitably struck by such questions as: has the skyscraper infant born in Chicago 70 years ago matured at last, or is it still in the growing up process? Is today's office building basically different from those 25 years ago, or is it the same thing in a shiny skin? What of these considerations: the shape of the building; the handling of the plot; the influence of mechanical systems and lighting; the use of color—and further problems? What are we to expect in the future?

All these matters — and others — were discussed with the architects responsible for most of these buildings, and those discussions constitute the major ingredient in this report.

Despite the lessons of Louis Sullivan, skyscraper design stubbed its toe on traditionalism early in this century and has regained balance to step forward with assurance only in the past 25 years. Today, the tall office building - in its best manifestation - can take its place in architectural history as a new and valid expression; one that embodies a fundamental articulation of space, structure, material, and utilities in a manner true to contemporary industrialized technology. The curtain-wall plus skeleton cage can be added to the historical listing of construction methods, along with the post and lintel, arch, and vault. The office building has become a useful (and sometimes beautiful) tool for our kind of society. But it remains for man to relate it to the total community. To design both as one - that is the challenge for the future.

Height, Shape, Economics Since it is a commercial venture, an office building that fails as an investment would be better never built. Commercial considerations will inevitably dictate both its working size and rentable shape. These basics must of course be tempered by zoning requirements, common sense, and esthetics — but the end result must please the bankers.

It is well known that expensive property dictates a tall building for adequate rental return; a ten-story building at Park Avenue and 50th would be a disaster. The added cost of constructing a higher tower is offset by the premium rentals the upper floors bring — such space is quieter and cleaner; offers daylight, privacy, prestige, and a view. At any level, the area not more than 26 to 30 ft from daylight (inner plus outer office) pays larger rentals than dark space — hence the popular slab form. Constructing large-area floors with much inside space (i.e., the zoning ziggurat) is in most cases

penny-wise and pound-foolish, for such space brings a lower rental in good times and in hard times possibly none.

The picture today: a real estate boom plus unprecedented demand for space plus high building costs mean higher buildings, higher rentals. The trend to taller, leaner buildings is everywhere evident.

The Plaza The principal difficulty with today's skycity is the ground-city below, where confusion, congestion, and esthetic chaos prevail. In the city, an open space with a touch of green is a blessing, as the architects (and owners) of Rockefeller Center demonstrated in the 30's. The lesson stood without emulation until the early 50's; but more recently the value of ground-space and planting has received wider recognition so that today, one can point to several further examples, and more are on the drafting boards.

At present, the plaza idea seems to be restricted to projects for corporate clients willing (and able) to make a conspicuous gesture for the sake of the prestige, amenity, and aura of success such a scheme lends their business headquarters. However, the hard fact remains that when a part of such space is leased, it yields top returns. Speculators please note!

The lower floors of office buildings (as well as their settings) are due for more intensive study; the day of the lobby-elevator-rental-area plan is shortening. Furthermore, traffic chaos and the development of suburban shopping have combined to place at least a question mark on the continuing value of ground floor shopping space.

If city usefulness and amenity are to be reborn, future planning must extend beyond a concern with the plaza or block and must encompass entire street patterns or indeed whole multi-block and neighborhood developments. Therein lies the future.

Structure and Skin Today, the steel cage — complete with cantilevers — is a highly developed commonplace. Welding will provide continuity and greater efficiency but will not alter its fundamental shape; the structural future would appear to lie in completely new concepts. Wright has advanced one *; there will undoubtedly be others.

The lightweight curtain-wall has come of age in the form of a modular, industrialized unit. For its facing, a variety of materials have been used, tried, or dreamed of — with more to come: glass, plastics, thin stone, metals, ceramics, etc. There are exciting potentials here; but considerations of facings will scarcely alter

the fundamental nature of this curtain-wall. Some maintain that its modularity gives scale and character to surfaces — others contend that its basic weakness lies in its monotony and jointing. These latter further predict that our ultimate construction will involve a building in which there is continuity of skin, continuity of structure, and continuity of skin and structure.

Glass We now see the glass wall, the modified glass wall, and the blind curtain-wall interrupted by vision panels. There is wide use of various kinds of colored glass, ostensibly to reduce sky-glare and cooling load. Out of all these variants no clear trend or uniformity appears, which is probably all to the good.

There does seem to exist, among clients, a continuing demand for large glass areas, despite the fact that many occupants then proceed to cover considerable portions of this glass with venetian blinds, hangings, etc. One owner says, "it is well to have it there so the tenant can use it as he wishes."

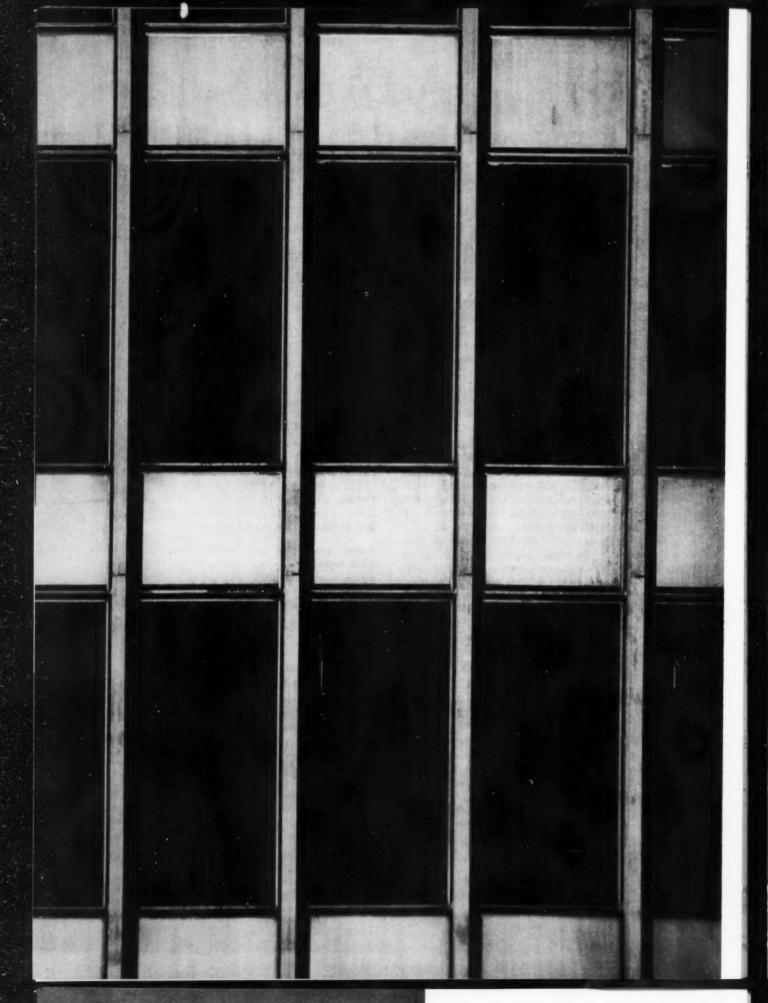
The problem of interrupting sunlight before it reaches the skin of the building promises to create a whole new series of patterns, textures, and even profiles for our tall and likewise for our lower buildings.

Color Traditional architectural conservatism with color appears to be undergoing a change, for increasing numbers of office buildings use color — muted or vivid. This development, tastefully handled, can lead to the kaleidoscopic city — not an unpleasant prospect, provided clean air makes it possible for one to view it and maintain it in all its radiance.

Air, Light, and Sound Control These are not last in importance, for air conditioning, sound control, and good lighting are office building musts today. High-velocity, small-duct systems for air distribution are now a well developed reality widely used, often in a peripheral belt supplemented by the central core system. For illumination, the demand runs to ever higher total intensities from large, low-brightness sources. Modular ceilings incorporating lighting, sound control, sprinkler heads, and air diffusers are now stock items — evidence that such utilities are increasingly thought of as part of the building and not as added fixtures in bits and pieces. The future will see the integration of all utilities into the very fabric of the building itself.

No one of the buildings that follow demonstrates all of the foregoing principles and ideas. All of them demonstrate most of the elements that characterize the new office building.

^{*} The deeply rooted central core that supports contilevered floor slabs, made hollow for utilities.

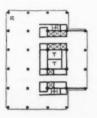


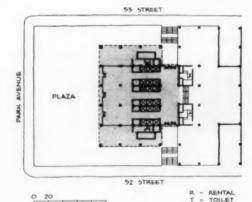
THE HOUSE OF SEAGRAM

375 Park Ave., New York

This project is of especial interest for both its exterior and its plaza. The structural cage will be clad in statuary bronze and glazed floor to ceiling with pink-gray glass. The design for the plaza, 100 ft deep and a full blockfront wide, is still under study.

The 38 story building, costing more than 20 million, will provide 530,000 sq ft of office area, one-third of which Seagram will occupy. There will be underground parking. Completion date: late 1957. Architects: Mies van der Rohe and Philip Johnson. Associate Architects: Kahn & Jacobs. General Contractors: George A. Fuller Company.

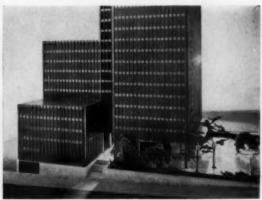














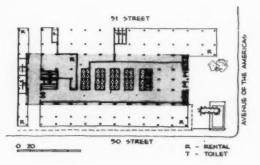
TIME AND LIFE BUILDING

50th to 51st Sts., Sixth Ave., New York

Located opposite Radio City Music Hall and the newest addition to Rockefeller Center, this building, as the others, will provide an open plaza area; in this case 200 by 80 ft. Preliminary plans for that space envision trees, planting, pools, and sculpture for it.

The 70 million dollar building will rise 47 floors to a height of 550 ft above the 82,000 sq ft plot and provide 1,400,000 sq ft of office area. Time's 2000 employes will occupy 20 floors, or 600,000 sq ft on a 21 year renewal lease. Architects: Harrison & Abramovitz. General Contractors: George A. Fuller Company and John Lowry.





Left to right: Monadnock Block, Chicago, 1891, Burnham & Root; Home Insurance Building, Chicago, 1885, William LeBaron Jenney; Tacoma Building, Chicago, 1887, Holabird & Roche; Masonic Temple, Chicago, 1890, Burnham & Root



Hedrich Blessing



Bettman Archive



Bettman Archive



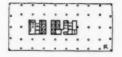
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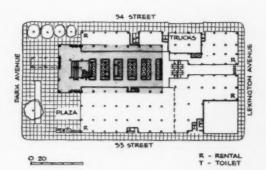
ASTOR PLAZA BUILDING

53rd to 54th Sts., Park Avenue, New York

Located directly north of the new Seagram building and directly east of Lever House, this project—as they—will feature a landscaped plaza of considerable area. The interrelationship of the three high shafts and their open ground areas should provide a spatial complex of uncommon architectural interest.

The 60 million dollar metal and glass structure will cover practically an entire block and rise 42 stories to provide 1,000,000 sq ft of office area for an estimated 10,000 people. Underground parking for executives. Architects: Carson & Lundin. General Contractor: George A. Fuller Company.







Tower Building, New York, 1889, Bradford L. Gilbert; Auditorium Building, Chicago, 1889, Adler & Sullivan; Wainwright Building, St. Louis, 1891, Adler & Sullivan; Guaranty Trust Co. Building, Buffalo, 1895, Adler & Sullivan



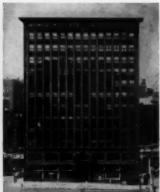
Arch. Record, 1891



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Hedrich-Blessing



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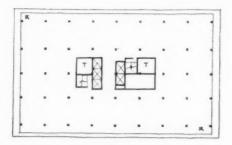


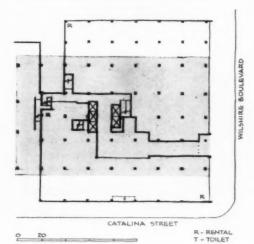
3325 WILSHIRE BUILDING

Wilshire and Catalina, Los Angeles

Sun control exerted a heavy influence in the design of this structure's exterior. The east and west façades feature a system of outriggers, set 3 ft from the glass, which support vertical aluminum louvers tilted to exclude the sun and admit only north light. The north and south sides of the building are protected by horizontal louvers.

The building's 13 stories rise 150 ft (the height limit in Los Angeles) over a 20,720 sq ft plot to provide 213,000 sq ft of office area. Parking on 5 lower levels will handle 360 cars. Architect: Victor Gruen Associates, Edgardo Contini, Structural Engineer.







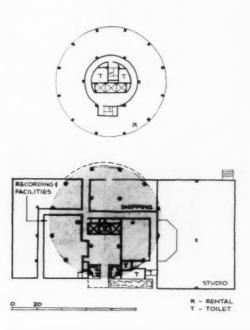


CAPITOL RECORDS TOWER

Vine & Yucca Sts., Hollywood, Cal.

Contrary to the popular Hollywood belief that this building's cylindrical shape derives from a stack of records, architect Becket explains, "the circular plan stems from carefully evaluated economics and sound planning principles. The 90 ft circle requires 20 percent less outer wall and makes possible a smaller core than would an equalarea rectilinear shape."

The 2 million dollar structure's 13 floors rise 150 ft (the legal height limit) to provide 78,000 sq ft of office area. Off-street parking at the rear handles 95 cars. Architect: Welton Becket & Associates. General Contractor: C. L. Peck Co.





Herbert Bruce Cross

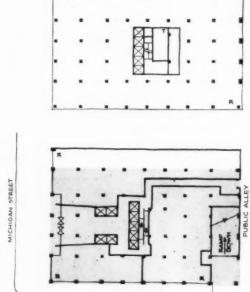


BORG-WARNER BUILDING

200 South Michigan Ave., Chicago

The use of color will be an important exterior feature. The lightweight curtain-wall will be clad in dark blue porcelain enamel spandrel panels, which will contrast interestingly with the aluminum windows and mullions. The latter will be anodized in a natural satin finish.

The structure will rise 21 stories (of which Borg-Warner will occupy five) and provide a net office area of 362,300 sq ft out of a gross of 431,000 sq ft. Estimated population is 3000. Lower level parking will be provided. Completion date: early 1958. Architects & Engineers: A. Epstein & Sons. Consulting Architect: William Lescaze.



ADAMS STREET

Left to right: Singer Building, New York, 1908, Ernest Flagg; Metropolitan Life Insurance Co. Tower, New York, 1909, N. LeBrun & Sons; Woolworth Building, New York, 1913, Cass Gilbert; New York City Municipal Building, 1919, McKim, Mead & White; The Tribune Tower as constructed, Chicago, 1922, Hood & Howells













TOILET

666 FIFTH AVE. BUILDING

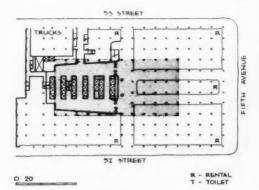
52nd to 53rd Sts., Fifth Ave., New York

This skyscraper will feature an anodized aluminum skin with patterned spandrel panels and 20 in. wide vertical column covers of white porcelain enamel. The 12 by $7\frac{1}{2}$ ft units will be inside bolted. All structural steel will be bolted.

Acquisition of air rights over an adjacent library enabled the architects to increase the originally planned tower area by 4000 sq ft.

The building's 38 floors, rising on a 61,000 sq ft plot, will provide more than 1,000,000 sq ft of office space. Completion date: summer of 1957. Architects: Carson & Lundin. Owner & Contractor: Tishman Construction Co.







Left to right: Tribune Tower Project (placed second) by Eliel Saarinen, 1922; American Radiator Co. Building, New York, 1925, Raymond Hood; Wrigley Building, Chicago, south portion 1922, north portion 1925, Graham, Anderson, Probst & While; New York Central Railroad Office Building, New York, 1929, Warren & Welmore



Chicago Tribune



Samuel Gottscho



Chicago Arch Photo Co



ARCHITECTURAL RECORD MARCH 1957

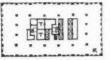


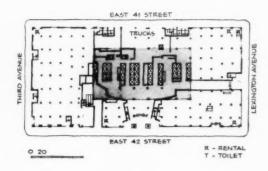
SOCONY-MOBIL BUILDING

150 East 42nd St., New York

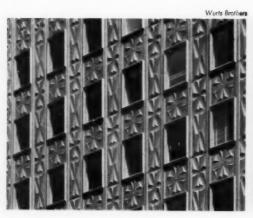
This building, the largest erected in New York for a quarter-century, is also the first skyscraper to be clad entirely in stainless steel. The panels are stamped in a pattern calculated to give them rigidity, reduce light reflection, and provide oblique vertical paths down which rain can wash.

The structure's 45 floors rise 567 ft above the two-acre plot and provide a net office area of 1,600,000 sq ft. Cost: about 37.5 million. Approximately 8000 people work in the building; 2500 of them for Socony-Mobil. Architects: Harrison & Abramovitz. General Contractor: Turner Construction Company.









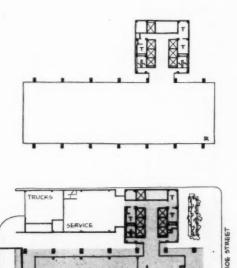


INLAND STEEL BUILDING

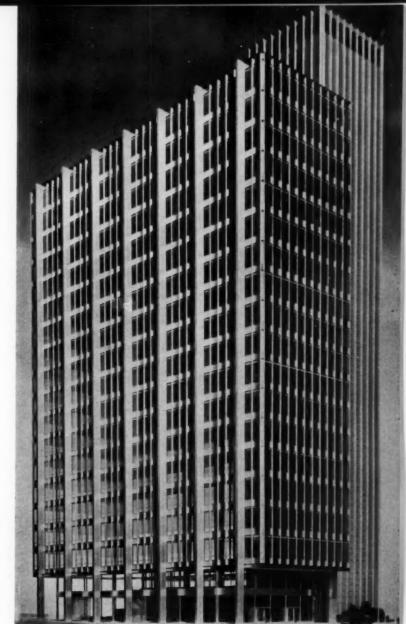
Dearborn and Monroe Sts., Chicago

This stylish stainless steel and glass shaft — the first such in Chicago — provides, at each level, a space 58 by 177 which is unobstructed by columns. This is accomplished, as the plan shows, by placing all elevators and service elements in the blank-walled ancillary unit.

The building's 19 floors (Inland will occupy the top eight) will rise 252 ft above the 192 by 120 ft plot and provide 189,000 sq ft of office area for an anticipated population of 1500. Completion date: fall, 1957. 60 cars can park on one basement floor. Architects: Skidmore, Owings & Merrill. General Contractor: Turner Construction Company.







Kaulmann & Fabry



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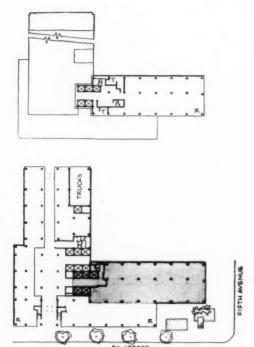
CORNING "TOWER OF GLASS"

717 Fifth Ave., New York

This building will, needless to say, be sheathed in glass; the exterior grid will be aluminum, details of which are under study.

The tower will rise without setback from the avenue and will, as the plan shows, shoot upwards alongside a landscaped plaza (60 by 30 ft in size) that will "open up" the corner.

The structure's 28 stories, rising over a 30,000 sq ft plot, will provide a net office area of 365,000 sq ft, most of which will be occupied by the Corning Company. Completion date: late 1958. Architects: Harrison & Abramovitz & Abbe. General Contractor: George A. Fuller Company.



Left to right: Telephone Building, New York, 1926, McKenzie, Voorhees & Gmelin; Fisher Building, Detroit, 1928, Albert Kahn & Associates; Board of Trade Building, Chicago, 1930, Holabird & Root; Empire State Building, New York, 1929, Shreve, Lamb & Harmon; Irving Trust Company Building, New York, 1930, Voorhees, Gmelin & Walker



Sigurd Fische



Hedrich-Blessing



Chicago Arch Photo Co.



N. Y. Times

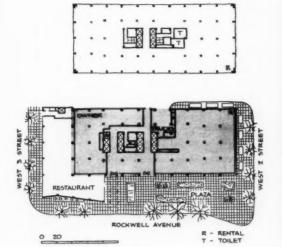


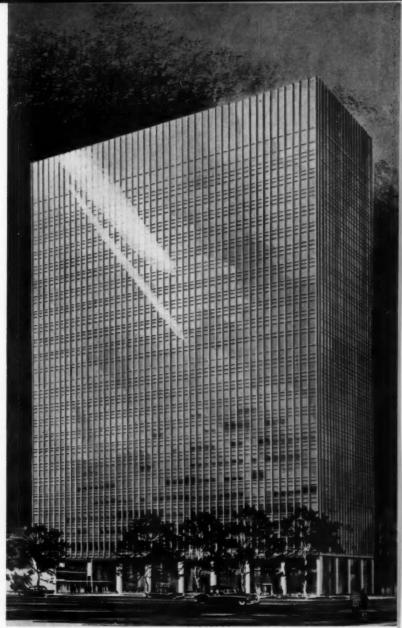
ILLUMINATING BUILDING

55 Public Square, Cleveland

This handsome shaft is the first tall building to rise in downtown Cleveland since 1930, and also the first in that city to be set in an extensive (250 by 55 ft) landscaped plaza. The smart, shimmering tower and its developed setting should have a salutary effect upon the architural scene in Cleveland.

The structure's 22 floors will provide a net area of more than 400,000 sq ft of office space, enclosed in a curtain wall of aluminum and glass. An adjacent ramp garage will provide parking for over 400 cars. Architects: Carson & Lundin. General Contractor: George A. Fuller Company.





Left to right: Chrysler Building, New York, 1930, William Van Alen; Daily News Building, New York, 1930, Hood & Howells; Rockefeller Center, New York, 1930's, Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Fouilhoux; McGraw Hill Building, New York, 1931, Hood, Godley & Fouilhoux; Savings Fund Society Building, Philadelphia, 1932, Howe & Lescaze















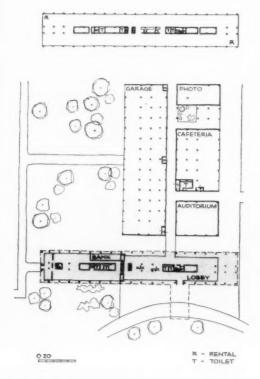


FORD OFFICE BUILDING

The American Road, Dearborn, Michigan

This attractive administrative headquarters building features, among other things, a curtain wall of insulated porcelain-enamel faced panels with aluminum surrounds and blue-green heat absorbing glass. The building includes extensive areas for company central staff services as well as space for offices.

The building's 12 floors rise 200 ft above the 90-acre landscaped plot to provide a net office area of 950,000 sq ft for 3100 Ford employees. Parking facilities: Three parking lots take 2300 cars; the indoor garage 320. Architects: Skidmore, Owings & Merrill. General Contractor: Bryant & Detweiler Company.



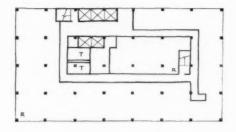


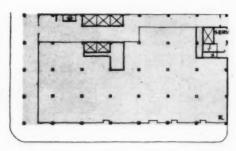
THE H. C. BECK BUILDING

Travis at Edwards Sts., Shreveport

This building adds a smart new dash of color to the Shreveport skyline. The lightweight curtainwall is sheathed in anodized aluminum elements: blue spandrel panels; light gray column coverings; satin aluminum windows and mullions. A public, multi-denominational chapel which can seat 60 persons is an interesting departure from the commercial norm.

The structure's 20 stories rise over an 80 by 150 ft downtown plot to provide a net office area of 195,000 sq ft out of a gross of 260,000. Nearby off-street parking is available. Architects: Neild-Somdal-Associates. Owner and General Contractor: Henry C. Beck Company.





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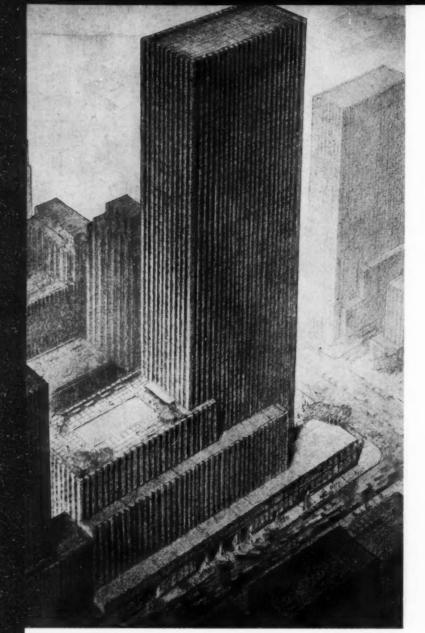
R - RENTAL S - SERVICE



Thurman C. Smith







33 WEST 51st ST. BUILDING

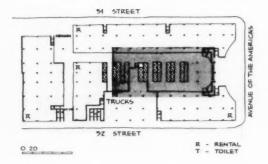
51st to 52nd Sts., Sixth Avenue, New York

This giant will be sheathed in stainless steel, as is the Socony building (see p. 238) — and upon completion will become the largest structure in the world so clad.

Further features: tower floors 15 through 60 will be entirely free of interior columns; the main mass will be set 40 ft back from the avenue to provide a "plaza forecourt."

The structure's 60 floors will rise 775 ft on a 100,000 sq ft plot to provide 1,700,000 sq ft of office area for approximately 10,000 people. Cost: 50-60 million. Completion: early 1960. Architects: Harrison & Abramovitz. Contractor: Turner Construction Company.





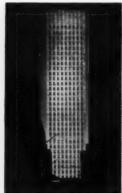
Left to right: Longfellow Building, Washington, D. C., 1941, William Lescaze; Equitable Building, Portland, 1948, Pietro Belluschi; Esso Building, New York, 1948, Carson & Lundin; Prudential Building, Los Angeles, 1948, Welton Becket & Associates



Ezra Stoller



Ezra Stoller



Ezra Stoller



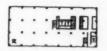
Douglas M. Simmonds

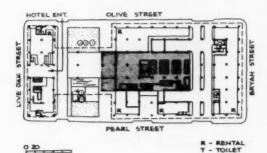
SOUTHLAND LIFE BUILDING

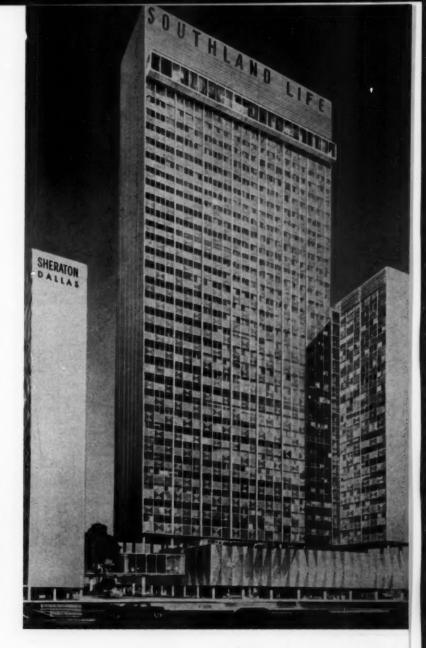
Live Oak, Pearl, Bryan & Olive Sts., Dallas

This striking complex, to be known as "Southland Center," will eventually comprise two office buildings and a 28 story, 600 room hotel, with gardens, arcades, and shops at ground level. The large building and hotel are under way; foundations for remainder are in place.

The 45 story, 25 million dollar central mass will rise 550 ft above the 100,000 sq ft plot and provide a net office area of 400,000 sq ft. Southland Life will occupy 18 floors. A four-level basement garage will park 2000 cars. Completion date for the first stage: late 1958. Architects: Welton Becket & Associates. Consulting Architect: Mark Lemmon.







U.N. Secretariat, New York, 1950, Wallace K. Harrison, Director of Planning; First National Building, Tulsa, 1950, Carson & Lundin; Mellon-U. S. Steel Building, Pittsburgh, 1952, Harrison & Abramovitz; Lever House, New York, 1952, Skidmore, Owings & Merrill



Joseph W. Molitor



Ezre Staller



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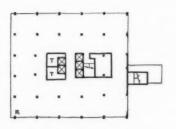
Joseph W. Moliton

711 THIRD AVENUE BLDG.

44th to 45th St., New York

Enlightened clients enabled architect Lescaze to lift this speculative building out of the class of Gotham's rampant zigguratism. Ways and means; trading a reduced cube for a cleaner, simpler tower two floors higher; colorful brick exterior—blue tower, white mid-platform, gray base; Hans Hoffman mosaic and Jose de Rivera sculpture for the lobby.

The structure's 19 floors provide a net rentable area of 400,000 sq ft — 372,000 of which is above the first floor. Basement parking is provided. Architect: William Lescaze. Owners — builders: William Kaufman, J. D. Weiler & B. H. Swig.









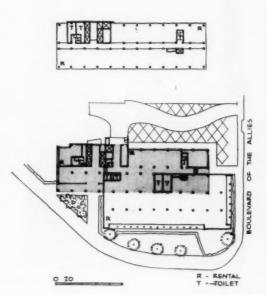


PITTSBURGH STATE OFFICE BUILDING

Point Park, Pittsburgh

This building, constructed with funds allocated by The General State Authority, a separate corporation of the Commonwealth of Pennsylvania, was one of the first to use colored anodized aluminum for its exterior. The panels are blue; the overlay grid natural aluminum.

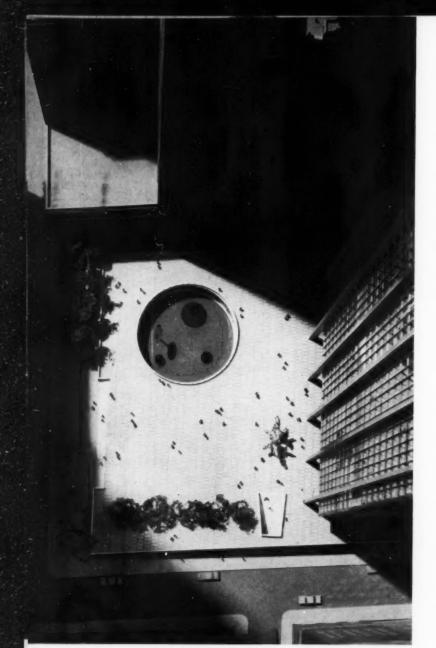
The 16-floor structure covers 47 percent of the 54,800 sq ft plot and provides an area of 295,000 sq ft, 80 percent of which is rentable. Cost, including partitions: under 6 million. Complete occupancy: spring of 1957. Architects: Altenhof and Bown.



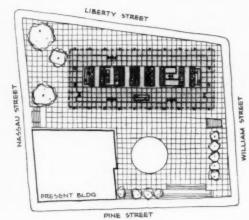




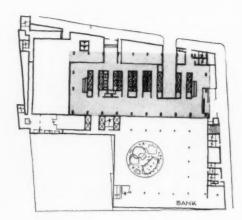








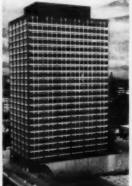
R - RENTAL T - TOILET



Left to right: Alcoa Building, Piltsburgh, 1952, Harrison & Abramovitz; Standard Federal, Los Angeles, 1953, Welton Becket & Associates; Mile High Center, Denver, 1955, I. M. Pei & Associates; Prudential Building, Jacksonville, 1955, Kemp, Bunch & Jackson







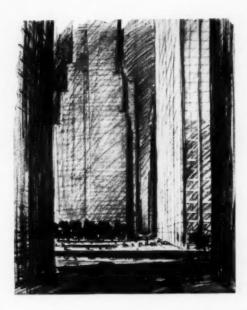


CHASE MANHATTAN BANK

Liberty & Williams Sts., New York

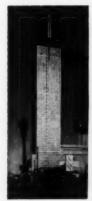
This imaginative project will make the first significant break in the canyon-like pattern of downtown New York by devoting 70 percent of its two-block site to an open plaza. A glistening metal and glass office shaft—its verticality emphasized by outer columns—will soar skyward from the man-made spread of the platform, otherwise punctured principally by the circular sunken garden for the bank below.

The tower's 60 floors will rise 815 ft above the 2.5 acre (113,000 sq ft) plot and provide 2,265,000 gross sq ft of office space for approximately 15,000 persons. Occupancy: early 1960. Architects: Skidmore, Owings & Merrill





Left to right: Republic National Bank, Dallas, 1955, Harrison & Abramovitz; Gill & Harrell; Prudential Building, Chicago, 1956, Naess & Murphy; Lutheran Brotherhood, Minneapolis, 1956, Perkins & Will; Price Tower, Bartlesville, 1956, Frank Lloyd Wright



Ulric Meisel



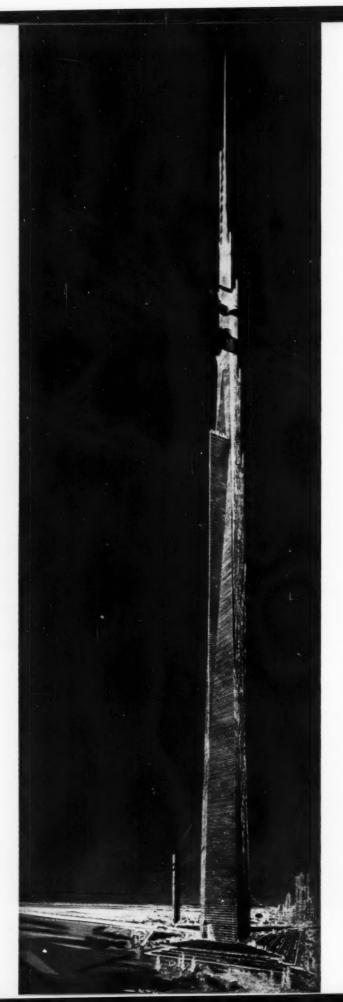
Chicago Arch Photo Co



Hedrich-Blessing



Joe Pric



THE MILE HIGH ILLINOIS

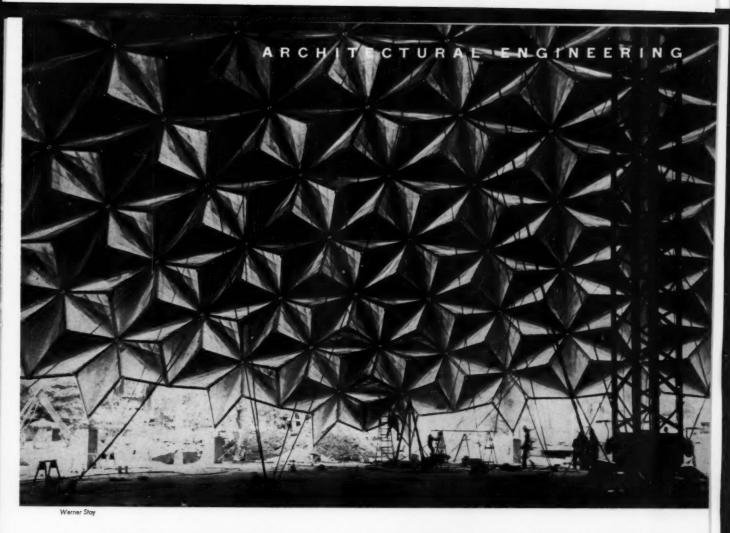
Frank Lloyd Wright's recently publicized * design for a "cantilever sky-city" is large in scope, daring in concept, and hauntingly provocative. One is forever confounded by the apparently limitless range of Wright's creativity.

The project's unveiling gave architects — and others — a great deal to ponder. There has been comment and discussion, pro and con, thoughtful and derisive. The inevitable "could it actually be built?" was asked.

But whether or not The Illinois is ever built in beside the point that for 60 years Wright has shown a talent for stirring up controversy; and such controveries almost invariably work to gain wide hearing for his ideas. In this fashion Wright continues to stimulate fresh architectural thinking and new directions in design.

Does this approach to the skyscraper hold portents for the future office building?

^{*} Architectural Record, Nov. 1956, p. 11.



A NEW WRINKLE IN STRESSED-SKIN

Aluminum panels pleated for strength

— and an exciting pattern

An aluminum dome recently built at Hawaiian Village in Honolulu will serve as a convention hall seating 2000 people. Rising almost fifty feet at its highest point, it spans 145 ft with no interior columns. It is ½6 in. thick.

Taking a leaf from the aerodynamicist's notebook, engineers of the Kaiser Aluminum & Chemical Corporation have fashioned thin aluminum sheets into rigid panels which combine to form a stressed-skin shell capable of resisting winds up to twice hurricane force. The diamond-shaped panels, proportioned in ten different sizes according to their position in the dome, are strengthened by six bends radiating from each end and intersecting in an intricate sunburst pattern. An aluminum strut, bridging the lengthwise valley created by this network of radial bends, makes each panel a strong structural unit, with loads equally divided between the panel and the strut.

These curved and stiffened aluminum segments are

geometrically arranged and fit together jig-saw fashion to mold the spherical surface of the dome. Where the corners of the panels converge, they are connected with specially-designed castings that disperse the loads through the shell to aluminum pipe struts used to anchor the dome to its foundation. The dual use of the aluminum panels as skin and framing members produces a strong, lightweight shell in which a minimum of materials gives a maximum of usable space.

The repetition of the same easily-joined basic units throughout also made it possible for the erection crew to assemble the dome in a matter of hours, without benefit of previous experience with a similar structure. Only 20 hours after the first panel was placed, the dome was ready to be anchored to its foundation.

The dome components — panels, struts and castings — were fabricated at a Kaiser plant in California. Before being shipped to the Hawaiian Village site, the 575 aluminum panels, which vary in length from 106 to



140 in. and in width from 65 to 82 in., were color-coded with a dab of paint on each to assure proper positioning in the dome. The panels and struts were formed without special dies, on a standard press brake. The precision with which they were made, plus the inherent stiffness of the panels themselves, was demonstrated later, by a settlement of only $\frac{3}{4}$ in. in the completed dome.

Upon their arrival in Honolulu, the panels and struts were assembled, and trucked to the dome site where a demountable structural steel mast 96 ft tall had been set up in the center of the dome's concrete foundation. Around this mast were assembled the panels which form the uppermost portion of the finished dome. When this section had been bolted together, it was raised high enough to allow another perimeter of panels to be installed. These in turn were bolted together, the larger section lifted, a third set of panels assembled—and so on until all the panels were in place.

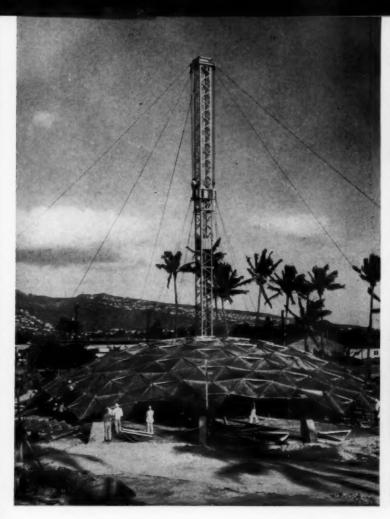
For assembly, the dome was divided into five segments, with a five-man crew for each. Three of the men positioned the panels and joined them to the castings; the other two bolted adjacent panels together through

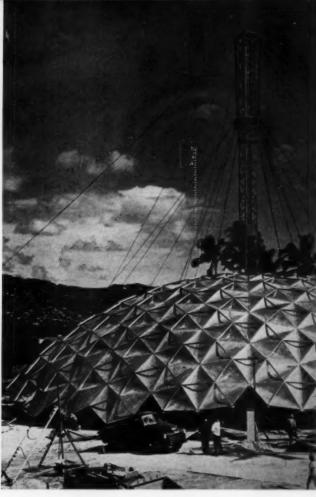












34 in. flanges along their outer edges to form a rigid shell. At those points where six of the "diamonds" converged, their ends were slipped over the prongs of star-shaped gusset castings and held in place with drift pins until they were bolted, while at the obtuse-angle corners of the panels the hub castings used to fasten the struts to the panels were simply fitted together and joined. All connections were made with special aluminum lockbolts to obtain a permanent high-strength union.

When the dome had been completely assembled and

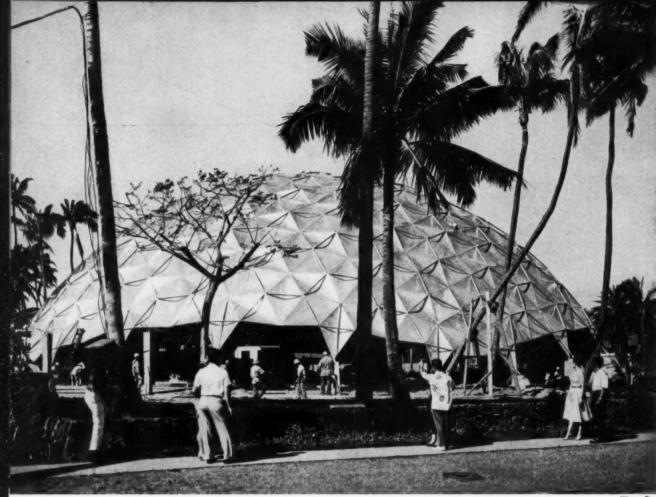
lifted, it was lined up with concrete piers spaced at equal intervals round its circumference, and anchored to them with aluminum struts. These piers, from 18 to 65 in. high, reach down 6 ft to a coral base, providing firm anchorage for the dome. The $2\frac{1}{2}$ in. pipe struts extending from each pier to the nearest gusset casting are connected at their base with pinned end connections to accommodate the 3 in. expansion and contraction of the dome. Rotary movement was prevented by placing the tips of the base panels in a track.

The anchorage of the dome completed, the portable





The stressed-skin aluminum dome of the Hawaiian Village convention hall was assembled in sections around a steel mast and hoisted with hand winches. Erection crews of the Terminal Steel Company of Honolulu fit the panels into place like a jigsaw puzzle, then bolted them to castings and adjacent panels. To anchor the completed dome, base struts extend from concrete piers to the nearest gusset casting. Erection time: 20 hours.

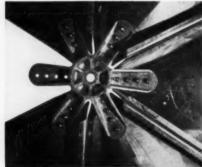


Werner Stoy

mast and rigging were removed and the exterior surface caulked along the joints between panels with a special sealing compound. A permanent overlapping cover of five aluminum panels was also placed over the 50 sq-ft opening left at the top of the dome. This elevated cap permits exhausting of air through the opening, forming what is in effect a built-in ventilating system.

Interior work on the convention hall involved only the construction of concrete walls at several of the openings to provide for a stage and other facilities, and the treatment for sound. According to acoustical consultants Bolt, Beranek and Newman, the convention hall is expected to present no difficult acoustical problems. The large curved segments will in themselves provide better acoustics than would a smooth spherical surface, and the use of a sound amplifying system will further reduce the need for special sound control devices. Only ½ of the interior surface will be treated, the acoustical material being applied directly to the panels to retain their geometric pattern while supplying alternate hard and soft sounding surfaces.





Aluminum hub castings (far left) fasten struts to panels, are bolted together during assembly. Star-shaped castings join tips of six converging panels.

SOUND SYSTEMS

Article 1: Fundamentals of equipment operation and selection

By J. F. McPARTLAND, Jr.

Engineering Editor, Electrical Construction and Maintenance

Basically a sound system is a hookup of several pieces of equipment to perform the functions of paging, public address, announcing and/or music distribution. Any sound system can be divided into three categories of equipment: (1) the signal source device, which provides sound in the form of an electrical signal to (2) the amplifier equipment, which strengthens the signal and modifies its characteristics and then delivers it to (3) the system loudspeakers, which convert the electrical signal into sound waves.

System Components

Typical sound system input (signal source) devices are:

- (1) Microphones
- (2) Radio tuner
- (3) Record or tape player
- (4) Tone generator (produces the electrical signal equivalent of a tone used for fire and other alarm signals, or of the sound of church bells or chimes.)

Functionally the amplifier equipment may be divided into two sections: the preamplifier and the power or booster amplifier. The preamplifier section provides some strengthening of the signal delivered by the system input device. It also equalizes the signal for tonal balance and provides for any desired intermixing of several signals, such as singing voice coming from one microphone on a stage and orchestra music coming from other microphones. Adjustments in volume and tone of the sound output from system loudspeakers are still other functions provided by the controls on the preamplifier section.

A signal, after modification in the preamplifier section, is fed into the power or booster amplifier. Here it is greatly strengthened, enabling it to make long runs in cables to the system loudspeakers so the sound output of each is loud enough for the area to be covered. Booster amplifiers are available in many sizes to meet the power require-

ments of a few or many loudspeakers in any type of system. Booster amplifiers can be operated in parallel to obtain power outputs which are multiples of the power of a single amplifier.

Physically, the arrangement of preamplifier and booster amplifier(s) may vary widely. By far the largest number of sound systems have both the preamplifier and booster amplifier on a single chassis. In custom-assembled console or cabinet rack mounting of amplifier equipment, the preamplifier and booster amplifier(s) are on individual chassis, but mounted close to each other. Sometimes, however, booster amplifiers are installed remote from their associated preamplifier, such as in another room or in outlying buildings from a main building in which the preamplifier and input devices are installed.

In the following paragraphs, each of the three basic categories of equipment is analyzed by itself and in its relation to the overall system, but for sake of clarity in reverse order from above.

Loudspeakers

There are two basic types of loudspeakers — horn speakers and cone speakers.

Horn or trumpet type speakers are capable of producing very high power sound output. Such units are particularly suited to outdoor applications (for example, playgrounds, athletic fields, outdoor industrial areas,) and indoor applications where high sound power is required to cover large areas (auditoriums, factories, gymnasiums, warehouses). Horn speakers require no auxiliary enclosures, and their rugged construction adds to their heavy duty, reliable nature.

Horn speakers are made of metal in a number of forms of flared horns and trumpets. In these speakers, sound waves are set up by a small moving diaphragm in a magnetic assembly called a driver.

An important characteristic of horn

At first thought, planning for sound systems might seem to be an easy matter. The list of basic components certainly is not large, and their primary functions are clear enough. But the key to good performance lies in knowing not only something about equipment operation, but in how the electronic gear is designed, adapted and combined to meet particular requirements whether it be paging or hi-fi

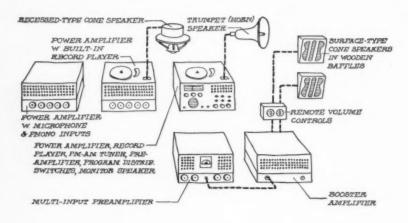
speakers is their inability to reproduce a very wide frequency range. In fact, their limited frequency response, directivity and high efficiency combine to make horn speakers ideal for locations where a generally high level of noise requires a sharp piercing reproduction of voice to override the noise.

Horn speakers are generally not used where music reproduction is important. There is, however, an all-metal, outdoor high fidelity horn, but this is an exception.

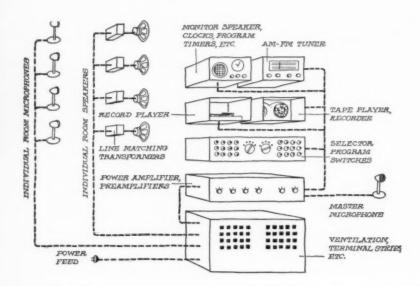
In the category of horn speakers, a number of variations are found. There are: so-called reflex trumpets (for directional sound projection), radial reflex projectors (for uniform dispersion in all directions), explosion-proof speakers (designed for use in hazardous locations), submersion-proof speakers (which are immune to salt spray, gasses, live steam, etc.) two-way and wide-angle dispersion speakers (for covering corridors and large areas respectively).

The second basic type of loudspeaker, the cone type, consists of a sound producing diaphragm of pressed paper in the form of a shallow cone, driven by a voice coil and magnetic assembly similar to the one used for the horn speaker. The cone speaker delivers its sound pressure output directly to the air, without benefit of a horn. (It is possible to use cone speakers with wood or metal horn structures to increase their efficiency, but this is not generally done.) The cone speaker is the type of speaker used in radios, television sets and home hi-fiturits.

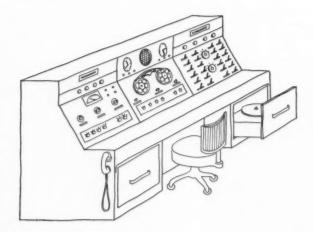
Cone speakers are less efficient than horn speakers but they generally are made with a wider frequency response. They can be made capable of clean, faithful reproduction of the complete range of sounds produced by musical instruments. Although they lack the long distance penetration of trumpets and large area coverage from a single unit, cone speakers are ideal for paging



Shelf-mounted units



Cabinet Rack Mounting



Console

and voice reproduction applications where general noise level is not high. Cone speakers are generally used indoors, but can be used for outdoor high fidelity reproduction if mounted in suitable weatherproof enclosures.

For best results a cone speaker must be used in a suitable enclosure or baffle—usually, a wooden box or metal enclosure of some type. Proper baffle mounting of the speaker assures maximum efficiency of speaker operation, minimizes distortion, smoothes frequency response and assures the best low frequency response of the speaker.

Number of Speakers. A fundamental problem in all sound installations is to determine the proper number of speakers to do the job. The decision frequently will have to be based on initial cost, convenience of installation and service, acoustic and esthetic factors. Among the latter are problems of reverberation, sound absorption and appearance. The problem reduces itself to the selection of one of two basic types of speaker systems: 1, high level, and 2, low level. In a high level system, sound is projected over a relatively large area from one or only a few speakers, each speaker operating at a very high level. In a low level system, a large number of speakers is evenly spaced throughout the area, each speaker operating at a relatively low level to cover only a small part of the total area.

High level systems find best application in large auditoriums, ball parks and theaters, where the speakers can be mounted at some distance from the audience to prevent blasting. In theaters and small auditoriums, a high level system which features a single sound source gives the illusion of sound coming from the lecturer because the volume can be adjusted to the lowest possible acceptable level.

Low level speaker systems are used for large spaces such as offices or in high noise areas such as factories where it is advantageous to place speakers close to the people hearing them. Railroad stations, airports and hotel lobbies are almost always wired with low level speaker systems. The low level of output from each speaker does not annoy or disturb anyone close to the speaker. In general, the speakers should be more or less equally spaced and mounted in strategic positions to provide uniform sound dispersion.

Speaker Placement. Obviously speakers should be mounted to provide uniform loudness over the area covered.

In churches, theaters and auditoriums,

speakers should be mounted well forward of the microphone(s) to prevent feedback, characterized by sustained high-pitched squeals when someone talks into the microphone.

Orientation of speakers is important in minimizing reverberation.

Speaker Hookup. Whether the sound system is of the simple type employing a single amplifier with a very limited number of speakers or one in which a group of amplifiers feeds varying amounts of power to a large number of loudspeakers, satisfactory operation depends upon an efficient transfer of power from the amplifier to the speakers. When the total loudspeaker load is properly connected to the output taps on an amplifier, their impedances are said to "match."*

There are two methods for connecting one or any number of speakers to an amplifier to obtain impedance match. The first is direct wire connection of the loudspeakers to amplifier output taps having an impedance value equal to the impedance of the single speaker or equal to the resultant impedance of the series and/or parallel hookup of a number of speakers. The second method for connecting loudspeakers to an amplifier involves the use of small transformers (about the size of a pack of cigarettes), called "line-matching" or simply line transformers. The use of transformers permits mounting of speakers at great distances from the amplifier and provides the means for delivering varying amounts of power to individual speakers.

Direct wire connection of loudspeakers to an amplifier can be used when the speaker hookup is simple and the wire lengths to the speakers are less than 200 ft. When the speaker hookup is complex and the wire runs over 200 ft, and when it is necessary to keep power loss in the speaker line under 15 per cent, transformers must be used.

Depending upon the size and type of area each speaker must cover, the speakers will usually require that varying amounts of power be supplied to them. Speakers near a source of noise need more power than those in quiet areas; a single speaker covering a large area needs more power than a speaker covering a small area. By using series, parallel or series-parallel hookups, varying levels of power can be delivered to the speakers. The best method, however, for varying power levels at individual speakers is to use line transformers.

Matching with Transformers. The use of a transformer at each speaker to match the speaker load impedance to the amplifier output impedance offers two important advantages:

1. It prevents excessive power losses in the speaker lines.

It simplifies distribution of varying power levels to individual speakers in installations requiring a large number of speakers.

There are two types of line matching transformers used to match speakers to amplifiers:

1. So-called "constant impedance" or "impedance matching" transformers. The primary is marked off in impedance values between 500 ohms and 14,000 ohms. Secondaries provide one or more voice coil values of impedance — usually 8 and/or 16 ohms.

2. "Constant voltage" transformers. This component is generally similar to the impedance matching transformer and differs essentially in that the secondary is marked in watts rather than ohms and provides for matching to 8 and/or 16 ohms loudspeakers. The primary taps are marked for connection to a 70-volt or 140-volt constant voltage line from the amplifier.

Most amplifier manufacturers in recent years have adopted constant voltage matching; it has proved very successful since a minimum of calculations is required to properly install a complex speaker system. This system is recommended in large multi-speaker installations. It permits changes in the number of speakers without recalculation of impedances and power delivered.

Also a more powerful amplifier may be substituted in an existing system at any later date without recalculation of the load and source impedances or changing connections on the line matching transformers.

Amplifier Equipment

Amplifiers combining preamplifier and power amplifier in one chassis are the type most frequently used. They run as high as 50 watts output. The chassis provides a variety of volume control knobs, tone control knobs, as well as the necessary microphone and phono input connectors and loudspeaker output terminals.

In large sound systems running to 100 watts or more, separate preamplifier and power amplifiers are usually employed for greater flexibility. One or more preamplifiers may be used to drive one or more booster amplifiers; and it is not uncommon to find large complex systems where a dozen or more amplifiers are connected to the output of a single preamplifier. In these large installations the preamplifier and booster amplifier chassis are mounted in consoles or vertical cabinet racks, with several program devices such as record player, tape recorder, radio tuner and tone generator, also mounted in the overall enclosure.

Many factors must be considered in selecting the proper amplifier, most important being

- 1. Power output required.
- 2. Number and types of inputs (e.g., microphone, phono).
- 3. Output impedance values.
- 4. Special functions.
- 5. Mounting of amplifier assembly.
- 6. Cost.

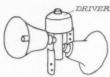
Power Output. To determine the amount of output power required from the amplifier, the number of loudspeakers in the system and the wattage level at which each loudspeaker will be operated must be known. If an installation requires ten loudspeakers - each providing approximately three wattsthen an amplifier with an output rating of 30 watts in indicated. However a larger amplifier than required for minimum load is preferable. For instance, in the above example it would probably be a good idea to select a 50-watt amplifier in place of the 30-watt unit. The slight difference in amplifier cost is more than offset by the increased power available for future demands. So far we have been discussing maximum output power. It is still possible to regulate the loudspeaker output to any lower sound level by the means of the adjustable volume control on the amplifier.

For some idea of the total power required in typical installations, see the table in Time-Saver Standards p. 267. The values given represent averages and are not particularly critical.

Complete amplification units incorporating a preamplifier and the power amplifier on a single chassis are readily available with the following output ratings: 10, 15, 30, 50 watts. Separate booster amplifiers are usually rated at 30, 50, 70, 100, 125 or 250 watts. Where large amounts of output power are called for, any number of booster amplifiers may be incorporated in a single sound system and driven from the preamplifier.

Number and Types of Inputs. Standard "packaged" amplifiers are available for systems requiring from one to five microphones and a phono mechanism or radio tuner. In one manufacturer's

^{*} Effective matching of the load to the amplifier exists when the resultant impedance of the speaker load (ohms) is approximately equal to the output impedance of the amplifier.



TWO HORNS BACK TO BACK POWERED BY SAME DRIVER UNIT COVER TWO OPPOSITE AREAS



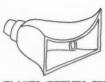
PAGING HORN ON ADJUSTABLE BRACHET



TRIAXIAL SPEAKERS HAVE 3 INDEPENDENT ELEMENTS, EACH REPRODUCING A DIFFERENT PORTION OF THE FREQUENCY BANGE.



REFLEX TYPE; MAY BE USED WITH TWO DRIVERS FOR EXTRA POWER



FLARED REFLEX SPEAKER FOR WIDE-ANGLE COVERAGE



"TWEETERS" REPRODUCE HIGH FREQUENCIES



DRIVER UNITS ARE USED WITH HORNS. LINE MATCH-ING TRANSFORMERS ARE OFTEN BUILT IN



WIDE-RANGE CONE SPEAKER FOR USE IN WOOD OR METAL BAFFLES



HIGH-FIDELITY WEATHER-PROOF SPEAKERS FOR OUTDOOR STADIUMS, ETC.

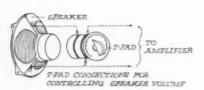


PROJECTOR FOR HEAVY-DUTY OUTDOOR APPLICATIONS

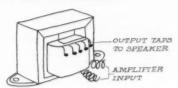


VERTICALLY MOUNTED RADIAL REFLEX PROJECTORS COVER PULL 360'AREA

Auxiliary speaker components



LINE MATCHING TRANSFORMER PROVIDES CONSTANT IMPEDANCE TO INSURE PROPER MATCH BETWEEN SPEAKER & AMPLIFIER



line of equipment, it was found that a 10-watt amplifier provided one microphone and one phono input; a 15-watt amplifier provided two microphone inputs and one photo input; 30-watt amplifiers were available with one or three microphone inputs, plus one phono input. Rounding out the packaged line were two 50-watt amplifiers, the lower priced unit with two microphone inputs and one phono input—the deluxe version with four microphone inputs and one phono input.

When the length of microphone cable does not exceed 50 ft, a high impedance microphone may be used. On the other hand, if the microphone cable must be run to lengths exceeding 50 ft, it is necessary to employ a low impedance microphone with a low impedance microphone cable, and to convert the amplifier input to accept the low impedance signal. Conversion from high to low impedance input is a relatively simple matter with several amplifier lines and consists simply of removing a shorting plug from the top of the amplifier chassis and substituting for it a plug-in transformer. This technique permits the microphone channel to be reconverted from low to high impedance at any later date. It also affords considerable flexibility in that a four-microphone-channel amplifier may be set up to work, for instance, with two high impedance and two low impedance microphones.

Special Functions. There are several special characteristics and functions which may be desired in an amplifier: tone controls, remote control and standby operation.

Controls - An amplifier may be required to have control over tone as well as volume for the individual input channels, particularly for music reproduction. Separate bass and treble tone controls provide both boost and attenuation at the high and low frequency ends of the audio spectrum. (Examination of typical amplifier specifications will show that some units provide only reduction of high and low frequency sound, and do not boost.) Tone controls should be considered if the system is to be of very high quality or if reverberation and acoustic feedback problems are likely to be encountered. This problem can be very severe in indoor installations, but can be remedied in many cases by the use of an anti-feedback control incorporated in some amplifiers.

Remote Volume Control — In many sound system installations (i.e., church, theater, auditorium), it is desirable to

control the volume at some distance from the amplifier. Some amplifiers can be equipped with remote volume controllers for microphone and/or phono input channels which can be operated as far as 2000 ft from the amplifier.

Standby Operation — Frequently, sound systems used primarily for paging are operated only briefly and intermittently; yet the amplifier power must be available at all times for immediate use. To reduce power consumption considerably during standby periods and increase life of the tubes, some amplifiers are designed for a plug-in standby controller relay. This device is energized by a push-button in the base of the microphone stand which places the amplifier in full operation only for paging.

Mounting of Amplifier Assembly. Most packaged amplifiers have a protective cage so that the equipment may be safely installed on a shelf or table. If the amplifier is to be mounted in a standard cabinet rack, it may be purchased without the cage and with the chassis securely attached to a heavy gage front panel. The panel is marked to identify all controls and notched at both ends to fit the cabinet rack. A shockmounting base is desirable in indoor installations where an amplifier is subjected to a vibration or shock.

Typical factors which affect the cost of amplifiers are as follows:

Power — Higher power amplifiers cost more because of larger transformers and huskier components.

Frequency Response — If an amplifier is to have a very wide frequency response for high fidelity it must contain well designed and sometimes elaborate circuitry, a very costly output transformer and frequently more expensive components.

Distortion -- This may be considered as undesired difference between the input and output signals, and is expressed in a percentage value. Generally, the amplifier price increases as the distortion figure decreases. Typical good p.a. amplifiers designed for commercial installations are rated at approximately 5 per cent distortion (for full amplifier output). Some deluxe p.a. amplifiers are rated as low as 2 per cent. In a manufacturer's catalog, the distortion percentage is usually indicated for full amplifier power output. Distortion decreases as the output is reduced from full power.

Program Sources

Microphones. Effective reproduction of speech and music by the sound sys-

tem depends to a considerable extent upon the microphone selected. There are many microphone types with a wide variety of characteristics to provide effective reproduction of speech and music. They may be classified according to their sensitivity pattern, the impedance of their outputs (high or low), principle of operation (crystal, dynamic or velocity).

Sensitivity Pattern - Microphones can be classified as uni-directional, bidirectional and omni-directional. These characteristics are extremely important, proper selection often making the difference in whether the system works properly or not. A uni-directional microphone, as might be expected, is sensitive to sound coming from one direction only and is selected frequently for stage and auditorium work. One of these is the cardioid microphone which enjoys tremendous popularity in night clubs and theater work because it rejects noise coming from the audience and provides pickup primarily from the performer or speaker. Its use is also dictated when acoustic feedback is a serious problem.

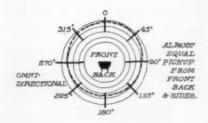
The bi-directional microphone will accept sound from both the front and back and is, therefore, a logical choice for interviews, dialogue work, etc.

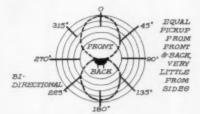
The omni-directional microphone does not discriminate against sound from any direction and is widely employed for group pickup, roundtable discussions, etc.

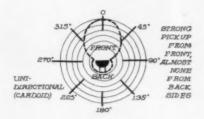
Output Impedance (High or Low) -A high impedance microphone (which could be a crystal or dynamic type) must be operated within 50 ft of the amplifier since the higher frequencies are attenuated considerably as the distance increases. Also high impedance microphone lines will pick up hum and noise from nearby power devices, appliances and their associated power lines. If the distance between the microphone and the amplifier must be greater than 50 ft. a low impedance microphone, low impedance microphone cable and suitable amplifier should be employed. Low impedance microphones may be operated over lines well in excess of 500 ft without attenuation of high frequencies or serious loss of signal level; the danger of hum and noise pickup from adjacent appliances and power lines is considerably reduced.

Microphone Types — When classified according to the fundamental principle of operation, we find three basic types of microphones: carbon, crystal and dynamic. The carbon microphone is al-

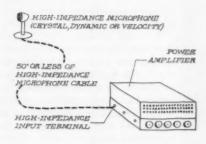
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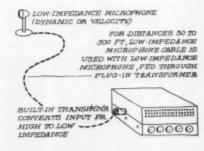






Types of microphones classified by directional patterns





Selection of microphone and cable based on distance from amp.ifier

Materials . Equipment . Furnishings . Services



STRESSED-SKIN PLYWOOD PANELS SIMPLIFY FRAMING, CUT BUILDING COSTS

Versatile stressed-skin plywood panels

A STRUCTURAL SYSTEM combining the flexibility of custom design with the time- and labor-savings of prefabrication offers new possibilities for low-cost construction.

Industrial designer Peter Bilder's Panelbild system employs sturdy stressed-skin panels, built with thin sheets of fir plywood glued to appropriate framing members, for floors, walls, and roofs. Custom-assembled according to the specifications of individual designers, the large structural units can be installed easily and rapidly without conventional framing. The panels, which are normally either two or four feet wide, will carry up to five times the maximum design load over spans from 8 to 20 ft. Although the thickness of the stressed-skin varies according to job requirements, 3/8 in. plywood is generally used for the top layer, and 1/4 in. for the bottom.

The panels are assembled with the top and bottom plywood surfaces slightly off center along their length to form an exaggerated tongue and groove. The side framing of one panel fits inside the overhanging plywood edges of the adjacent panel so that the plywood

surfaces butt solidly together. Extra space left in the groove of the longitudinal joint provides a wiring chase and permits slight variations in placement of the supporting members. Insulation, usually glass fiber between the panels and an aluminum reflective surface on the underside of the top skin, is applied in the shop.

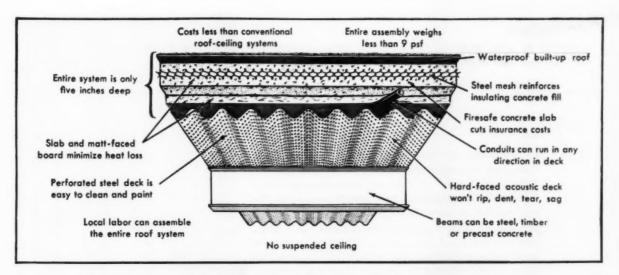
Architects, Lea, Pearson and Richards AIA, of Tacoma, Washington recently made extensive use of the panels in a clinic designed as the headquarters for two Tacoma physicians. A U-shaped, one-story structure built around a small covered court, the clinic has floors, walls and roof of stressed-skin plywood. A simple post and beam framing system with 4 in. by 6 in. beams spanning 4 in. square posts, four feet on center, provides supporting members for the roof and wall panels. Even the foundation is laid out so that concrete footings on 14 ft. centers support the floor panels - in most cases without further framing, although a few girders and piers are used where dictated by the floor plan. Panelbild Systems, 7010 196th S. W., Lynnwood, Washington

(More Products on page 284)

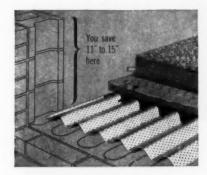
replace conventional framing for floor, walls and roof of this one-story clinic. Built to individual designers' specifications, panels span up to 20 ft, bear as much as five times design load.







New idea in school ceiling-roof construction



5-INCH SYSTEM. A suspended ceiling system usually requires 16" to 20" in depth. Only 5" deep, the Structur-Acoustic system saves 11" to 15" in wall height, saves thousands of dollars in materials and labor.



GOOD ACOUSTICS. Tests conducted by Riverbank Acoustical Laboratories indicate that Structur-Acoustic system with $2\frac{1}{2}$ slab provides Noise Reduction Coefficient of .80. Clean, corrugated underside of Structur-Acoustic reflects light, can be painted to matching color scheme. Hard surface won't dent, stays attractive. Heat loss is kept to minimum with U factor in excess of 0.14. Firesafe system protects both building and contents, helps reduce owner insurance costs.

NEW STRUCTUR-ACOUSTIC DECK MAKES 5-INCH ROOF SYSTEM POSSIBLE

EASY TO ASSEMBLE, USES LOCAL LABOR

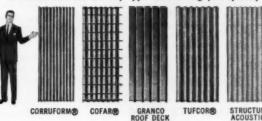
A new combination of building materials, the Structur-Acoustic roof system eliminates suspended ceilings, offers one-third more roof for your dollar than conventional school roofs with similar features. Heart of the system is Structur-Acoustic—a galvanized, corrugated, perforated steel sheet that weighs only 2 psf. Strong but lightweight, these high-tensile, tough-temper steel units are easy to handle and place, form a firm structural deck for the ceiling-roof assembly. Entire system can be assembled by local labor—no bulky prefabricated assemblies to ship long distances at high freight rates. For schools, one-story offices, factories, stores—wherever sound control is desirable. For more information, contact Granco home or district office, ATTN: Dept. R-74.



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Gemological Institute of America Richard J. Neutra, F.A.I.A.

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SOUND SYSTEMS—1: Sample Specifications and Definitions

B-AMPLIFIER

CABINET

By J. F. McPARTLAND, Engineering Editor, Electrical Construction and Maintenance

A. "A jack panel 2 in. wide, 19 in. long with 24 pairs of jack inputs shall be mounted on front of amplifier cabinet. Nine pairs of jacks shall terminate microphone lines through seven pairs of jacks on second row which shall connect seven preamplifiers. Four additional pairs of jacks shall terminate telephone wire and input lines from rooms as indicated in drawings."

B. "The amplifier cabinet shall house a selenium rectifier designed to supply 110 volts dc for field excitation of three auditorium electrodynamic speakers."

C. "Power amplifier shall furnish all voltage for its own requirements and for the preamplifiers. Output shall be 50 watts with less than 5% harmonic distortion, or 40 watts with less than 2% harmonic distortion. Tube complement shall provide push-pull driver stage and push-pull parallel output stage. Overall gain of voltage and power amplifier is to be 105 db at 1000 cycles. Frequency response shall be flat from 50 to 10,000 cycles within plus or minus 2 db. Output transformer shall have tapped secondary providing a 4 to 250 ohm impedance range."

D. "A high-quality balance line transformer coupling output of power amplifier to telephone wire line input shall be furnished. Frequency response shall be 30 to 15,000 cycles within plus or minus 1 db."

E. "Voltage amplification shall be accomplished by seven preamplifiers and the master mixer. Each preamplifier shall have a separately controlled 250-ohm input impedance and shall use a 1612-type tube, the filament and plate voltages of which are supplied by the associated power amplifier.

The master mixer unit shall be furnished having a high-impedance input and master gain control. Control of gain to be accom-

G-5 STAGE & 1 OFF-STAGE MICRO PHONE FLOOR RECEPTACLES-H-RECORD REPRODUCING UNIT-I-DESK MOUNTED REMOTE VOLUME CONTROL CONSOLE EQUIPMENT CONTROL

E-7 PREAMPLIFIERS

& 1 MASTER

MIXER

ROOM

D-BALANCE LINE TRANS FORMER

G-POWER

A-JACK-PANEL

AMPLIFIER

SOUND SYSTEM LAYOUT FOR LARGE SCHOOL

plished in same manner as preamplifiers."

F. "There shall be provided two monitor loudspeakers, one each in equipment room and control room; surface type; 3-watt; 7 in. diameter; 4-in deep cones; voice coils 6 ohms; impedance actuated by Alnico permanent magnets equipped with multi-tap speaker-matching transformers. The cones shall have a frequency range from 70 to 8000 cycles with a distribution angle of 165 degrees at 1000 cycles. Speakers shall be mounted behind metallic grille cloth in a sloping front surface-type wall housing, sloped to blend with wall at bottom."

G. "Five stage and one off-stage microphone floor receptacles are to be equipped with one each varacoustic microphone having a frequency response of 80 to 8000 cycles; adjustable characteristics so as to permit

its use in non-directional, bi-directional, or uni-directional pickup. Impedance 250 ohms, output 58 db.

ROOM

BOLINOW ST

LOUDSPEAKERS

H. "Reproduction of recorded programs shall be by means of high-quality record reproducing unit having a cushion-mounted motorboard and a felt-covered balanced 16-in, turntable disc, driven by a high-torque motor, through rollers which will permit operation at either 78 or 331/2 RPM. Frequency response of turntable shall be 70 to 8500 cycles."

I. "A desk-mounted remote volume control console, to be located in control room, shall be provided for monitoring of reproduction from a remote point. Controls are to be connected in parallel to the controls on voltage amplifiers. A volume control shall be provided for the monitor speaker."

SOME TERMS USED IN SOUND WORK

Acoustic Feedback — The transfer of sound from the loudspeaker back into the microphone in such a manner as to create an annoying squeat or howl.

Amplifier - A device of electronic components used to strengthen the originating signal from a microphone or record player to the point where it will operate loudspeakers Baffle - Most commonly used synonymously with loudspeaker housing and may be a suspended, or surface or recessed, ceiling or wall mounting device made of wood, plastic or metal, in which a loudspeaker is housed.

Booster Amplifier - An amplifier designed to boost the level of a signal from a preamplifier to provide power for driving loudspeakers.

Decibel - A unit used to measure the relative loudness of sound. Engineers employ the term also to designate power or voltage

- Usually expressed in decibels, this

term is applied to indicate the increase in voltage or power output over the voltage or power input.

Impedance — Literally the opposition that a circuit offers to the flow of alternating current. Primarily used in the sound field as an important characteristic of amplifiers, microphones and accessories.

Loss - A term usually expressed in decibels to indicate the decrease of voltage or power output from voltage or power input.

Mixer — Usually a pre-amplifier which permits several microphones, record player and/or radio tuner to be combined through volume controls. The suitably mixed signal is then usually fed to the input of a booster amplifier.

Monitor Loudspeaker - A small loudspeaker mounted in a console or cabinet rack (or adjacent to these) which provides an audible indication of the sound level of the system and which permits preliminary adjustment of the amplifier output before distribution to remote loudspeakers.

Pre-Amplifier - Frequently used synonymously with mixer, although it may be designed to provide for increasing the level of only one input signal.

Radio-Tuner - Permits reception of AM or FM programs. Differs from receiver in that it does not incorporate audio amplifier and loudspeaker.

Reproducer - The cartridge mounted in the tone arm which tracks the record grooves by means of a stylus (needle), picking up the electrical signal equivalent of the music or sound which was recorded.

Turntable Pickup — Includes the tone arm, cartridge and stylus (needle) which follows the record grooves and provides an electrical signal suitable for feeding into a preamplifier, mixer or amplifier.

Volume Level Indicator - A device (meter. nean bulb, etc.) which permits the operator of a sound system to determine visually the sound level output.

HEARD EVERYWHERE COLUMNS COLUM

THE SOUND CHOICE / AL SERIES BAFFLE



Beautiful . . . in appearance and in performance.

Mounts flush for low-ceiling areas. Effective 360° dispersion of clear "ear level" sound. Conical diffuser "floats" on soft rubber grommets. Heavy gauge aluminum. Sizes available for 6" to 15" speakers. Easily installed.

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SOUND SYSTEMS - 2: Design Considerations

By J. F. McPARTLAND, Engineering Editor, Electrical Construction and Maintenance

1. LOUDSPEAKERS

- A. Number of speakers (depends upon size, shape and type of area)
 - One or a few, each operating at high output (high-level speaker system)
 - Relatively large number, each operating at low output (low level speaker system)
- B. Types of speakers
 - Cone speakers in wall-mounted, ceiling-mounted, or suspended-baffle enclosure
 - Horn speaker (trumpet, projector horn, re-entrant horn, etc.)
- C. Amplifier connection
 - Direct connection to amplifier output taps corresponding in impedance value (ohms) to impedance value (ohms) of a single speaker or of a number of speakers in series, parallel, or series-parallel
 - Connection to amplifier constantvoltage output taps (70, 100, 140 volts, etc.) through constant-voltage line-matching transformers
 - Connection to amplifier high-impedance output taps (250 or 500 ohms) through constant-impedance linematching transformers.
- D. Placement of speakers
 - Assure uniform loudness (eliminate dead or hot spots)
 - in churches, theatres and auditoriums, place speakers well forward of microphones to prevent feedback (squealing)
 - 3. Minimize reverberation

2. AMPLIFIERS

- A. Power output
 - 1. Typical ratings: 6, 10, 15, 30, 50, 70, 100, 125, 250 watts
 - Output required depends upon size and type of area to be covered in sound system (see accompanying table)
- Number and types of inputs (terminals for connecting high- and/or lowimpedance microphones, record player or radio tuner)
- C. Output taps (impedance values)
 - Direct connection: 4-, 8- and 16ohm taps
 - Constant-voltage line transformer connection: 70-, 100-, or 140-volt taps
 - Constant-Impedance line transformer connection: 250- and/or 500-ohm taps

- D. Special functions
 - Record player built into amplifier housing
 - Amplifier, microphone and speakers in carrying case (portable system)
- E. Controls
 - 1. Tone
 - 2. Anti-feedback
- F. Remote volume controller (plug-in unit for use at distance from amplifier)
- G. Power source
 - 1. 110-125 v ac, 60 cycles
 - 2. 115 v ac, 25 cycles
 - 3. 115 v dc
 - 4. 6 or 12 v dc
- H. Amplifier mounting
 - 1. Portable, with protective cage
 - Panel-mounted, for installation on rack
- Cost (increases with power rating and fidelity of reproduction)

- J. Separate preamp unit (for one or more remotely located power or booster amplifier)
- K. Custom assemblies (amplifier, preamp, ratio tuner, record player, or other input devices mounted in vertical cabinet rack or console cabinet)

3. INPUT DEVICES

- A. Microphones
 - 1. Crystal, dynamic or velocity
 - Omni-directional, bi-directional, or uni-directional (cardioid)
- B. Record player (automatic or manual)
- C. Tape player
- D. FM-AM radio tuner
- E. Tone generator
 - To produce tone signal for factory work shifts, lunch periods, etc.
 - 2. Electronic siren for alarm applica-
 - 3. To simulate sound of large bell in church belfry

AMPLIFIERS AND SPEAKERS FOR VARIOUS APPLICATIONS

| Application | Sq. Ft. Area | Amplifier Rating (Watts) | Number of Speakers | Type of Speakers | | | | | | | |
|--------------------|-----------------|--------------------------------|--------------------------|----------------------------|--|--|--|--|--|--|--|
| | 2,000 | 15 | 2 | 12" Cone in Wall Baffles | | | | | | | |
| Auditoriums | 5,000 | 30 | 2 | 12" Cone in Wall Baffles o | | | | | | | |
| | 15,000 | 50 | 4 | 12" Projector Horns | | | | | | | |
| | 2,000 | 15 | .4 | | | | | | | | |
| Ballrooms | 4,000 | 30 | 4 | 12" Cone in Wall Baffles | | | | | | | |
| | 10,000 | 50 | 6 | | | | | | | | |
| | 1,000 | 10 | 2 | 10" Cone in Wall Baffles | | | | | | | |
| Churches | 4,000 | 15 | 2 | 12" Cone in Wall Baffles | | | | | | | |
| 1 | 15,000 | 30 | 4 | 12" Cone in Wall Baffles | | | | | | | |
| Classrooms, | 500 | 10 | 1 | 8" Cone in Wall Baffles | | | | | | | |
| Offices and | 2,000 | 15 | 2 | 10" Cone in Wall Baffles | | | | | | | |
| Stores | 8,000 | 30 | 4 | 10" Cone in Wall Battles | | | | | | | |
| | 1,000 | 15 | 2 | 10// 0 14 | | | | | | | |
| | 4,000 | 30 | 4 | 12" Projector Horns | | | | | | | |
| Factories | 8,000 | 50 | 4 | Re-Entrant Horns | | | | | | | |
| | 40,000 | 100 | 10 | Re-Entrant Horns | | | | | | | |
| | 1,000 | 10 | 1 | | | | | | | | |
| Funeral Parlors | 4,000 | 15 | 4 | 12" Cone in Wall Baffles | | | | | | | |
| ranors | 10,000 | 30 | 8 | | | | | | | | |
| Restourants | 1,000 | 15 | 2 | | | | | | | | |
| and | 5,000 | 30 | 6 | 12" Projector Horns | | | | | | | |
| Night Clubs | 10,000 | 50 | 12 | | | | | | | | |
| Stadiums | 3,000 | 15 | 2 | 12" Cone in Wall Baffles | | | | | | | |
| and | 10,000 | 30 | 4 | Re-Entrant Horns | | | | | | | |
| Gymnasiums | 50,000 | 100 | 8 | Ke-Entrant Horns | | | | | | | |

NOTE: Values given in table are averages - not minimums or maximums

S.hoDoCo World's Most Respected Name in the Manufacture of Glass Shower Enclosures presents the newest . . . Vue-Lume **ROLLING GLASS DOORS** The World's first rolling glass doors with *All-Points Weatherseal, and *Unconditional 12 Year Guarantee * Vue-Lume's exclusive AP (All-Points) Weatherseal of deep pile mohair at threshold, header, interlocker and DOUBLE jamb seals as snugly as a refrigerator. WEATHERSEAL

* The sturdiest engineering design, the most exacting mechanical tolerances, and the finest quality materials obtainable allow ShoDoCo to

unconditionally guarantee VUE-LUME Rolling Glass Doors for 12 yearsanother industry "first".

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For name of your nearest distributor and further information, fill out this coupon and mail to:

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DEEP GLASS PENETRATION CAST CORNER SECTIONS ADJUSTABLE ROLLERS ADJUSTABLE WEATHERSEAL SPECIAL CONDENSATION DAM

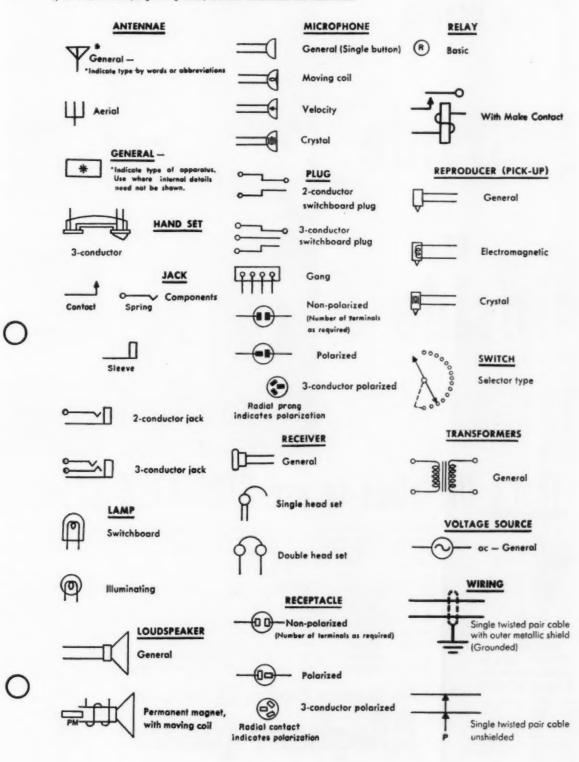
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THRESHOLD

WORLD'S LARGEST MANUFACTURER OF SHOWER ENCLOSURES

SOUND SYSTEMS - 3: Wiring Symbols

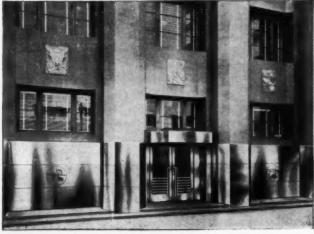
By J. F. McPARTLAND, Engineering Editor, Electrical Construction and Maintenance



Wherever people give a building a beating

outside

or inside





That's the place to use STAINLESS STEEL



Write for your copy
"STAINLESS STEEL for
STORE FRONTS and
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If modernization or new construction is on your mind, this 40-page booklet contains many ideas on handsome treatments for you. (Note: A new booklet on "AL Stainless in Food Preparation and Serving Equipment" is in process— —write for one of the first copies when available.)

Address Dept. R-87

You have to design for maximum attractiveness in those areas of buildings which have most traffic—such as building fronts, marquees, entrances, lobby details, railings, etc. Yet those same places are exactly the locations where you need maximum utility,

What's the best material to use? Just remember that stainless steel—and only stainless steel—gives you the nearest-to-perfect combination of satiny beauty and rugged toughness. No other material is as good-looking and at the same time as

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In short, whether you're considering AL Stainless Steel for just the "hard-wear" spots or for an entire curtain-wall design, keep this fact in mind: no other material costs as little over the long pull as stainless steel.

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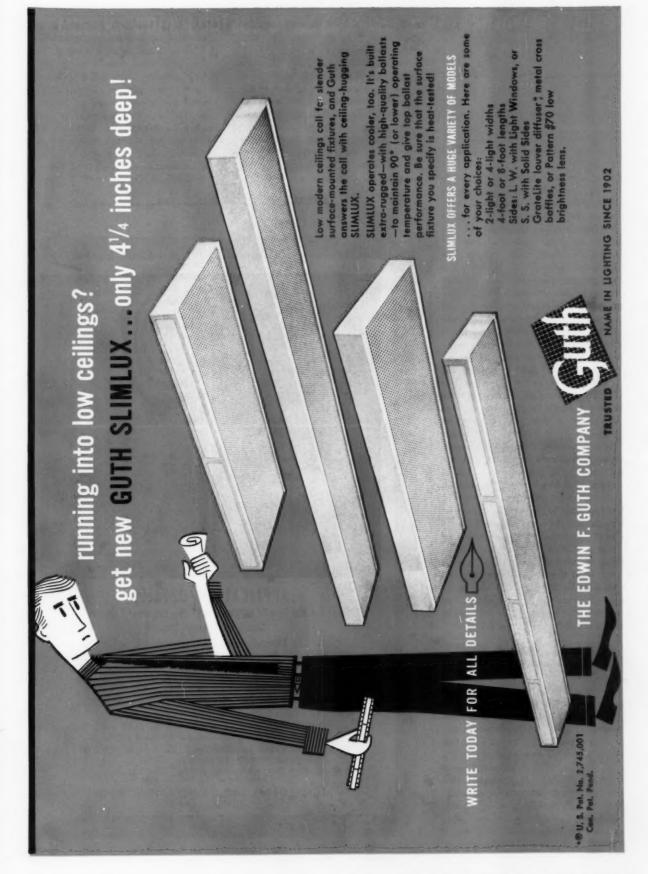
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SOUND SYSTEMS

(Continued from page 259)

most never used in commercial sound systems.

The crystal microphone is always a high impedance type, very economical and capable of excellent performance. Its application must be confined to places where temperatures are below 125 deg F.

The dynamic microphone is constructed somewhat like a miniature dynamic loudspeaker and actually operates on the same principle. Because of such factors as its ruggedness, wide frequency response, moderate price and availability with either high or low impedance output, it is probably the most popular type in use today for commercial sound systems. Some high impedance dynamic microphones are assembled with a small switch at the rear of the instrument which permits the selection of high or low impedance.

Other Types — Infrequently the requirement for the highest possible quality will indicate the use of a velocity or ribbon microphone which is used often in broadcast studio work. This type of microphone is more fragile than the dynamic.

Tone Generators. It has become almost standard practice to include a tone signal generator in the larger console and vertical cabinet rack assemblies installed in factories. A typical tone oscillator of this type may be easily connected to the time clock in the factory to give a steady tone of short duration. In more elaborate systems, it is not unusual to find an electronic siren which can be triggered not only at the amplifier assembly but also from remote points in the building to indicate the presence of fire. For church sound systems, a small built-in device simulates the tone of a bell.

Cables

The cables which connect the microphone(s) or other input devices to the amplifier or which connect preamplifiers to booster amplifiers are called "input leads." An input lead may be any one of several types of cable assemblies either run free or carried in conduit. The more common types of input leads are:

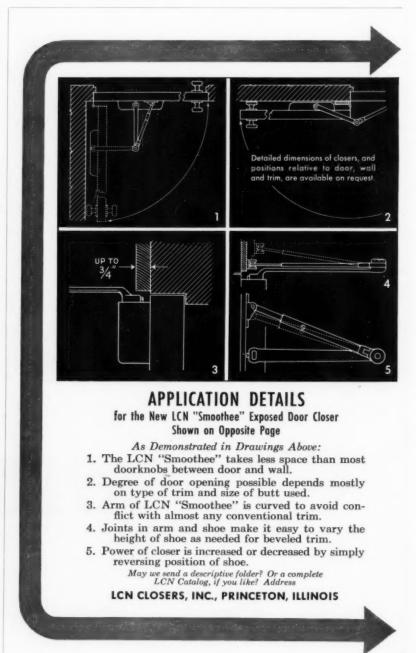
Microphone Cables. In general, there are two types of specially designed cables used to connect microphones to amplifiers: (a) high impedance cable, (b) low impedance cable. They are used with microphones with these designations.

Phono Leads. The cable used to con-

nect record players (manual or automatic) to amplifiers is invariably a single shielded conductor.

Output Leads. Cables run from the output taps on the amplifier to the loud-speakers (either directly or through line matching transformers) are called "output leads." Such wiring is not usually susceptible to interference from power or signal circuits and does not ordinarily require the shielded conductors used with microphones. In some special sound installations — as in a school system

where the classroom loudspeaker is often employed for intercom purposes — the loudspeaker line may have to be shielded. In multi-channel sound systems installed in hotels and hospitals it is also standard practice to use shielded twisted pair speaker lines to prevent cross talk (transfer of a signal from one line into an adjacent line). In the majority of speaker hookups, however, an unshielded single twisted pair cable with an outer cover of cotton braid or vinyl plastic is generally used.





AN EXPOSED TYPE CLOSER FOR INTERIOR DOORS OF WOOD OR METAL

Officially Nos. 4002, 4003 and 4004

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Application Details on Opposite Page

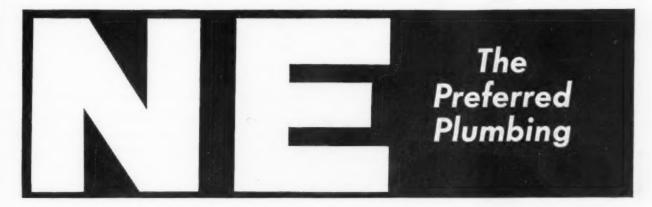


NOW...hospital fixtures that



A scrub-up sink that's easy to keep sterile. Made of Crane exclusive Duraclay. Medicines, acids, corrosive solutions or even excessive rubbing with abrasions won't mar the gleaming surface. Designed so surgeon can scrub to shoulder without touching unsterile parts. Photograph

above shows installation in Chatham County Memorial Hospital, Savannah, Georgia. Architect: Abreu & Robeson, Atlanta, Georgia. General Contractor: The Jordon Company, Columbus, Georgia. Plumbing Contractor: Seckinger Sons Company, Inc., Atlanta, Georgia.



hospital people helped design!

How would you go about designing specialized hospital plumbing fixtures? Well, Crane went right to the source—to doctors, medical technicians, hospital management people and hospital architects.

Part of the result you see here—hospital fixtures designed specifically for hospitals and for hospitals only—not just adaptations of residential fixtures.

The larger fixtures are made of the exclusive Crane Duraclay—a vitreous

glazed earthenware that has been adopted by thousands of hospitals during the past 15 years. Duraclay will not crack or craze, even under extreme thermal shock. It will not corrode or change color; resists abrasion, acid and stains. And, Crane offers a most complete line of fixtures for ALL hospital plumbing requirements.

Why not talk to your hospital clients about Crane? You'll find that they agree with your preference for Crane hospital fixtures.



Hygiene Pier Pattern Bath for Patients' Wards. Deeper than ordinary bathtubs. Accessible from three sides—or four in case of free standing fixture. Makes it easy for nurse to wash patient. Made of famous Duraclay. Available with thermostatic mixer, mercury thermometer, shampoo fitting. Base not included.



Cornell Service Sink for everyday use. A general utility disposal sink commonly used on the operating floor, nursing and obstetrical departments. Flushing action is similar to that of a water closet. Base is not included.

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273



LONGEST FREESPAN PRECAST GIRDERS SPAN SCHOOL GYM

Precast concrete roof girders, believed to be the longest ever used, span 146 ft in a Springfield, Missouri high school gymnasium. Architect Richard P. Stahl based his choice of a structural system for the building both on appearance and on early estimates which indicated that the use of prestressed girders and precast concrete roof panels would permit spanning the area at a saving over other types of construction. Early in the design stage. Stahl and consulting engineer Eric C. Molke of Prestressing Research and Development, Inc., San Antonio, Texas decided upon a construction procedure that allowed the king-size girders to be placed by a simple application of regular prestressing equipment without tving up heavy cranes.

The girders were poured and prestressed on the ground, and raised between twin columns with the same jack used for prestressing. Frame continuity was introduced later by prestressing the raised girders to the columns. To form the groove and mortise joint used for

this connection, the beams were poured in place, with end blocks the same width as the combined columns, and a "tongue" extending between them. A 3/4 in. space was left between the girders and the columns by backing the plywood forms that lined adjacent column faces with 3/8 in. steel straps.

Because of the large positive bending moment at midspan, the upper flange of the girder continues at the same width as the columns and end blocks. The narrower bottom flange is shaped to accommodate the roof decking, and provided with reglets above slab level to receive flashing. The girders themselves vary in height from 51/2 ft at the column faces to 7 ft at midspan, and are stiffened by six vertical ribs in each. The 8 in. web thickness permitted draping the prestressing units from low in the bottom flange to two vertical rows at the supports.

When the concrete had reached its 7-day strength of 4000 psi., the girders were completely stressed on the ground.



The prestressing jacks were then placed on lifting yokes at the tops of the columns and used to hoist the girders. The 2 in. lifting rods were in two sections, coupled together, with a short steel anchor beam at the bottom to distribute the pull to four anchor bolts embedded in the concrete. After the girders had been raised, they were simply supported on a rocker bearing over the slightly rounded surface of a rail bulb while cranes placed the precast roof panels.

Girders and columns were finally connected by stressing 12-wire units threaded through holes at the top of the columns into corresponding holes in the girder end blocks. All units were grouted after prestressing to fill spaces in the flexible tubing. To provide lateral support for the girders, anchor plates along their bottom flange were welded to similar plates cast into the bottom of one rib of the concrete panels. The joint between the panel ends and the girders was then filled with mortar and covered with sloping concrete corner fill. In addition to increasing the stability of the roof system, this made it easier to apply the flashing which was later caulked into the reglets along the beams.

AIR CONDITIONED SIDEWALKS FOR "OPEN AIR" SHOPPING



Air conditioned stores are old hat in Texas — now they're air conditioning the sidewalks too. San Antonio's North Towne Plaza shopping center has turned the 16 ft covered sidewalk fronting its stores into an air conditioned mall by glassing in the parking area side and installing 7½ hp air conditioning units in three adobe brick closets spaced around the walk. The result is an up-to-date version of the old open air bazaar. Merchants leave their doors open and use the area in front of their stores for display, with a reported increase in store traffic and sales of impulse items.

FIRE RESEARCH FACILITY TO TEST BUILDING FINISHES

A fire technology research building recently constructed by Southwest Research Institute is the only one of its kind in the country that is available for industrial use. The research facility. a 20 by 40 ft insulated frame building lined with incombustible material and resting on a concrete slab, includes a 25 ft fire tunnel for evaluating materials used for interior building finishes. The fire tunnel is lined and has a removable cover on which materials to be evaluated are placed. Air is drawn through the tunnel at the rate of 200 feet per minute, with temperature and humidity carefully controlled, while two gas burners at one end simulate flame conditions that may develop in a severe fire. The action of the fire on materials being tested is observed through glass windows on the side, and records are made of the rate at which flame spreads, as well as the smoke density and heat generated at the exhaust end. When necessary, samples of the hot gases can be taken to check for toxicity.

(More Roundup on page 278)

IMPORTANT REASONS WHY

Architects-Engineers-Contractors and Owners prefer the CURTIS 50 Ton PACKAGED AIR CONDITIONER

INSTALLATION EASIER: Line assembled at the factory—eliminates expensive field labor.

PERFORMANCE KNOWN: Curtis units are run-in at the factory and guaranteed to deliver their rated tonnage.

Assures a BALANCED SYSTEM.

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PACKAGED LIQUID CHILLER UP TO 100 TONS



PACKAGED AIR COOLED UNITS UP TO 71/2 TONS

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AIR HANDLING UNITS COOLING TO WER AND EVAPORATIVE CONDENSER TO MATCH MANUFACTURING CO. REFRIGERATION DIVISION

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CH 22

How high velocity solves problem of flexibility in the Medical Towers

Architects: Golemon and
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Consulting Architects: Skidmore,
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Consulting Engineers:
Bernard Johnson and Associates
General Contractor:
Tellepsen Construction Co.
Air Conditioning Contractors:
Straus-Frank Company

| Tarrer |

When the new Medical Towers Building in Houston, Texas was planned, the key air conditioning problem was flexibility. Professional office areas had to be subdivided after the building was completed. Here's how an Anemostat dual duct high velocity air distribution system solved the problem.

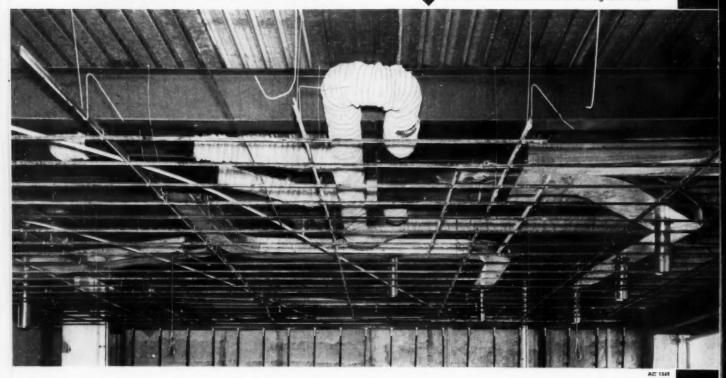
As shown in the diagrammatic sketch, a system of perimeter take-offs from the hot and cold ducts enables each doctor to provide the exact temperature he wants. Temperatures in the various rooms of each suite of offices can be varied. Air distribution is draftless, comfortable, perfectly suited to tenants' needs.

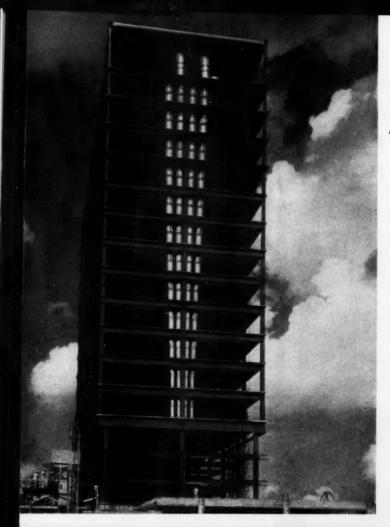
The Anemostat All-Air High Velocity distribution system offers further important advantages. It can be used with smaller than conventional ducts. It can be installed in less time and at less cost. It requires no coils, thus eliminates leakage, clogging and odors.

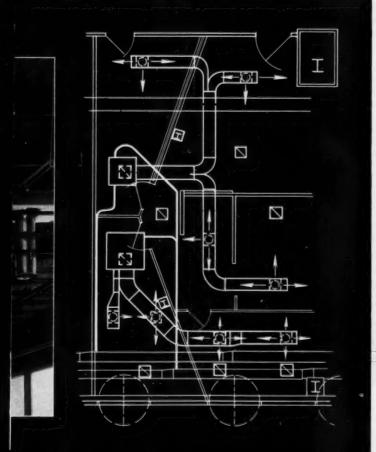
ARCHITECTS—Attention Please:

Anemostat round, square and straightline diffusers with high velocity units are adaptable to a wide variety of architectural designs.

Anemostat HPE units and duct connections installed in office before construction of ceiling and walls







Note how locating of hot and cold ducts saves space in new Medical Towers Building, Houston, Texas



View of lobby showing Anemostat Air Diffusers



View of professional reception room

Layout of typical suite



Write on your business letterhead for your copy of

New Anemostat Selection Manual 60

to Anemostat Corporation of America, 10 East 39 Street, New York 16, N.Y.

ANEMOSTAT: The pioneer of All-Air High Velocity Systems



Dependable AC switch control is of vital importance in any fluorescent lighting installation where high levels of illumination require a large number of fixtures operated at full rated capacity. As in the beautiful school plant above, Topper AC quiet action switches are the ideal choice because they are designed to control many more fixtures than conventional switches, thus permitting control of more fixtures with each switch. Operation of heavier circuits (and fewer of them) results in lower wiring costs. Remember, too, that Topper switches are shallower, take up less room and are easier to install.

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TECHNICAL ROUNDUP

(Continued from page 275)

NATURAL STONE CHALLENGES METAL CURTAIN WALL



The natural stone industry's answer to the metal curtain wall is demonstrated in two new state office buildings in Harrisburg, Pennsylvania which have thin curtain walls of limestone backed with cellular glass insulation. Architects Lacy, Atherton and Davis of Harrisburg devised a method of applying 4 in. thick slabs of Indiana limestone to a steel grid framework, their weight carried on steel angles at their base and their tops anchored. After the limestone was hung it was parged with a cement mixture, and the 2 in. blocks of cellular glass applied with a cold setting mastic. In a few areas relatively inaccessible from the inside, the insulation was installed free-standing and the limestone secured in place in front ot it. A bead of sealing compound seals all the joints so that the insulation also acts as a vapor barrier. The interior surface is covered with a metal partition liner.

Particle Board Conference Held

An exhibit of some 300 samples of wood particle board and other new materials that provide outlets for leftovers from forest thinnings, lumbering and product manufacture was featured at the recently held international particle board conference. The two-day conference climaxed the second year of special surveys and studies of wood residue utilization techniques conducted by the Timber Engineering Company for clients in the lumber, particle board and wood-using industries.

(More Roundup on page 282)

Cat. No.

1221

20 amp.

120-277 volt

AC Switch

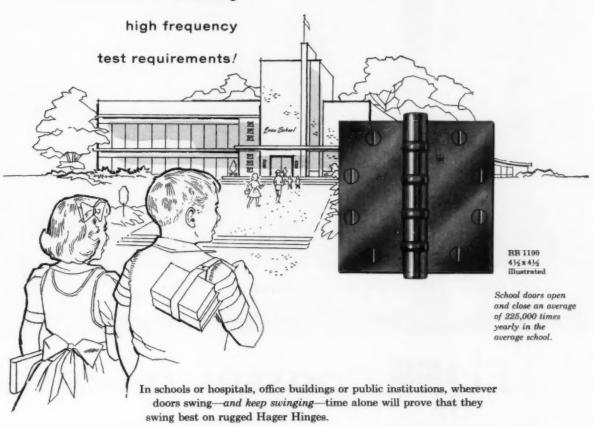
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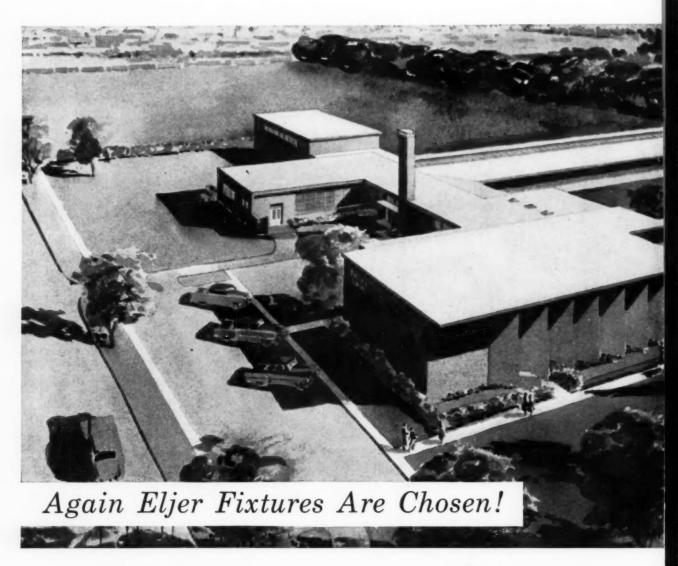


Architects and specifiers who demand exacting performance know the reputation for strength and stamina of Hager Butt Hinges as intimately as their own slide rules. With the experience of years of tests and analysis, they've learned that Hager engineered Butt Hinges meet the test of time for heavy traffic loads.

Specify Hager Butt Hinges for your next job. They're tough! They're rugged . . . and every Hager Hinge swings on 100 years of experience!



C. HAGER & SONS HINGE MANUFACTURING COMPANY . ST. LOUIS 4, MISSOURI



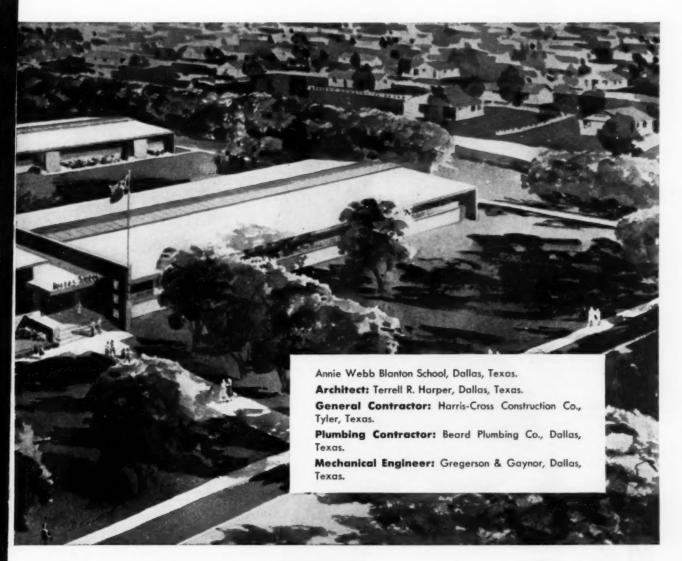
ELLER "passes all tests"



Modern production methods in all four vast Eljer plants speed delivery and protect the quality of Eljer fixtures.

Craftsmanship, exemplified in the age-old skill of the modeler, assures you that every Eljer fixture meets today's highest standards.





for new Texas school

Efficient sanitation is a major factor in the selection of plumbing fixtures for today's schools. Equally important is rugged quality that will meet requirements for school installation.

We are proud that Eljer fixtures have been chosen for Dallas' handsome new Annie Webb Blanton School – and for so many other new buildings across the nation.

Eljer's unusually complete line – in vitreous china, formed steel and cast iron *plus* steel kitchens – can meet your most exacting requirements for either white or colored fixtures. Eljer brass fittings are completely renewable.

Our representatives will be glad to work with you on the plumbing fixture specifications for your projects. Please call on us at any time. DIVISION OF THE MURRAY CORPORATION OF AMERICA
Three Gateway Center

Pittsburgh 22, Pa.



TECHNICAL ROUNDUP

TESTS CONFIRM DESIGN FOR "HOUSE OF TOMORROW"

The Monsanto "House of Tomorrow" (AR, Aug. '56, p. 210) took a step toward realization when recent tests verified basic engineering calculations for its design. Assumptions about its structural behavior were based on small scale laboratory tests of many combinations of plastics and reinforcing materials, but this was the first test undertaken on full-scale components.



For the test sections, a combination of polyester resin and glass fiber reinforcement was selected. Two of the 8 by 16 ft bents which will form the shell of the house were cantilevered from a test frame and subjected to static and thermal loads up to twice the design limits. Static loadings in the form of water-filled drums were imposed in stages on both halves of the bent, separately and together. Maximum loads were found to be 110 psf on the floor section, 80 psf on the roof section. Thermal loadings, designed to test the frame connections and jointing details, consisted of hot water sprays which quickly raised the surface temperature of the sections from 34 to 114 deg F. The resulting 80 degree difference between roof and ceiling was equivalent to a uniform loading of 40-50 psf in the opposite direction from snow and wind loads.



The five-month test program was planned and conducted by the engineering department of Monsanto Chemical Company's Plastics Division with professors A. G. H. Dietz, F. J. Heger and F. J. McGarry of M.I.T. as consulting engineers.

VCheck these points before you specify gym seating



Are they strong and safe?

The entire steel understructure of Medart Seats is a free-standing self-supporting unit that can safely carry over 400 pounds for each linear foot per row without noticeable deflection or side-sway. Wood seats, risers and floorboards add extra strength and stability. Each row is supported on 4 vertical twin angle uprights that place the seated load directly on the floor. The safety of Medart Seats does not depend on oblique bracing, wood members, springs or wall fastenings.



Easy and trouble-free operation?

"Floating Motion" operation is achieved with interlocked free-floating telescoping steel arms and supports that move in and out with surprising ease. "Dual Align" roller housings, with retractable floor-protecting non-



What about maintenance and upkeep?

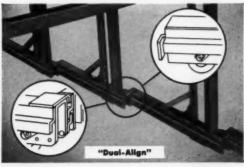
Medart Seats make cleanup fast and easy. Seats and footboards can be swept clean while seats are open. After closing, refuse and dirt are quickly gathered with a push broom. Maintenance is virtually nil. Only the riser boards are exposed when seats are closed, hence no work is required, other than occasional wiping, to retain the trim, like-new appearance of Medart Seats.



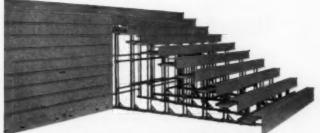


■ More than minimum comfort?

Seats are built with either 22' or 24' row spacing, but in addition, Medart Seats provide plenty of heel room below each riser plus full toe space under each seat board to add many extra inches of "relaxing room." Either 10½' or 11½' row rise provides the maximum in full visibility.



marring rubber rollers, are interlocked for straight-line trackage. Together, these two Medart exclusive features assure true alignment, prevent binding, make Medart Seats easiest of all to open and close.



These are only a few of the many definite advantages designed into Medart Seats—advantages that have placed Medart Seats in more schools and colleges than any other make! Write for complete catalog.



FRED MEDART PRODUCTS INC. . 3540 DE KALB ST. . ST. LOUIS 18, MISSOURI

PRODUCT REPORTS

(Continued from page 260)

Room Air Conditioners

Featured in the 1957 line of *Philco* room air conditioners for residential and commercial use are two 1-hp models available with the *Ionitron* electrostatic air purifying system which generates negative ions said to relieve hay fever symptoms. One of the models operates on either 208- or 230-volt service, another innovation in the line. *Philco Corp. Philadelphia*, *Pa*.



Packaged Kitchen

Latest addition to the Youngstown line of kitchen equipment is a modular package kitchen with wood doors on the steel wall cabinets and an over-all harmoniz-

ing color. Features include a universal cabinet oven with adapter plates to accommodate most built-in ovens; a counter top with continuous backsplash and front trim to eliminate sealers; and sliding door "pantry" cabinets installed between base and wall units with a built-in light valance to spread even illumination along the counter surface. Though designed to include a built-in oven and range top, jet-tower 30-in. dishwasher and food waste disposer, the kitchens are flexible and can be planned to fit individual requirements by merely adding cabinets or eliminating units. The cabinets are produced in three-inch modules, starting at 9 in. Youngstown Kitchens, Warren, Ohio.



Non-Skid Gratings and Treads

Relgrit gratings and treads feature a hard, non-absorbent abrasive baked into V-shaped openings along the top edges of the grating bars. The abrasive is embedded about ½ in., and extends above the bars to provide sure footing while retaining the advantages of open flooring. According to the manufacturer, the non-skid surface is effective wet or dry, and its wear resistance is two or three times that of steel. Reliance Steel Products Company, McKeesport, Pa.



Welded Counter Refrigerators

With the addition of electric cooking units, welded all-aluminum counter refrigerators become self-contained kitchens with refrigeration and heating facilities for modern food service operations. The superstructure is completely wired and fused, and contains outlets for 3, 5 or 7 cooking units. All models have consoweld work tops, and adjustable legs, glass doors and sliding refrigerator drawers are also available. Foster Refrigerator Corp., Hudson, N. Y.

(More Products on page 288)



LUTHERAN BROTHERHOOD HOME OFFICE BUILDING, Minneapolis, Minnesota. Architects: Perkins and Will, Chicago. General Contractor: Kraus-Anderson, Inc., Minneapolis. "Twindaw" and Glazing: Pitisburgh Plate Glass Company.

Modern Sealing for Modern Design

Contributing to the attractive curtain wall construction of the Lutheran Brotherhood Building are two Vibradamp products for modern design . . . #3474 FORM-A-SEAL, a non-hardening, non-shrinking, permanently pliable sealing tape . . . and #1270 FLEXSEAL, a permanently plastic gun-applied sealer for metal-to-metal joints. Together they form a positive, lasting seal against air, dust and moisture.

Through continuing research and development, Vibradamp is able to produce better sealing products for modern design. For full information and product samples, write Department A.

VIBRADAMP CORPORATION, JACKSON, MICHIGAN Producers of Sealers, Deadeners and Adhesives for Industrial and Automotive Applications.

HERE'S COMFORT EVERYBODY CAN AFFORD



This home—properly engineered with aluminum-clad insulation—is heated and air conditioned for less than \$12.00 a month

Because adequate insulation surfaced with ALCOA® Aluminum was in the building specs, this 1273-sq-ft home in Toledo is heated and air conditioned today for less than \$12.00 a month.

Built by Scholz Homes, Inc., Toledo, Ohio, it is a fine example of "comfort engineering." Solar orientation, shade trees, correct roof overhang—all contribute to the remarkable results possible with adequate aluminum-clad insulation.

And important to builders, this year-round-comfort selling feature means a smaller furnace and a smaller air-conditioning unit—equipment costs are at least 25% lower when you install adequate aluminum-clad insulation.

For proof, attend the ALCOA Insulation Show when it appears in your area. Live entertainment that dram-

atizes the findings of recent ALCOA-sponsored research, the show is appearing in the thirty cities listed below.

ALCOA'S new book about insulation, Comfort Everybody Can Afford, contains valuable information that will help you sell better houses—faster. Return the coupon and we'll be happy to send you a copy.

Alcoa does not make insulation of any kind. It makes ALCOA Aluminum Foil, which many manufacturers use to produce several types of insulation.

INSULATION SHOWS IN THESE CITIES

Baltimore, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Dallas, Detroit, Fort Worth, Indianapolis, Kansas City, Long Island, Louisville, Miami, Milwaukee, Minneapolis, Newark, New Orleans, Norfolk, Phoenix, Portland, Sacramento, San Bernardino, San Diego, San Mateo, Seattle, Tampa, Washington, Westchester Co., N. Y., Wichita.



THE ALCOA HOUR TELEVISION'S FINEST LIVE DRAMA ALTERNATE SUNDAY EVENINGS



Aluminum Company of America, Industrial Foil Division 1611-C Alcoa Building, Pittsburgh 19, Pennsylvania

Gentlemen: Please send my free copy of your new book about insulation, Comfort Everybody Can Afford — and tell me time and place of the Insulation Show in my area.

| Name | Title | |
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| APPROPRIAT | TION LEDGER | | | | | |
| 255827 | AMOUNT | | | | | |
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One Underwood Sundstrand Model D machine efficiently handles all the work

- Accounts Payable
- Payroll
- Income
- Budget
 Appropriations
- Miscellaneous School District Records

'underwood accounting system soon pays for itself!"

says Linford F. Moyer, Secretary, School District of Pottstown, Pennsylvania

"We now have complete up-to-date records at all times. It would have been impractical to maintain these records in the same detail by a hand accounting system. . . . The savings in time for recording of detailed information will alone quickly pay for the cost of the Underwood Sundstrand Model D accounting machine . . .

"The flexibility and simplicity of this machine make it possible to change from one operation to another in a very few minutes. We found that changes can be made in our applications from time to time . . . and a new application added whenever it outgrows the hand accounting system . . .

"After operating it for more than one year, we wish to express our complete satisfaction with the Underwood accounting machine . . . our sincere appreciation for your cooperation in setting up the original system and training our people."



Underwood experts can also help develop just the right accounting system to solve your particular problems. Call our local Underwood representative or write Underwood Corporation, One Park Avenue, New York 16, Accounting Machine Division.

underwood

The master-touch in business machines



This corrugated floor of reinforced concrete, no thicker than a concrete sidewalk, combines strength and light weight, is supported only by the outer walls and thus achieves columnless, long, clear spans. Open spaces in corrugated folds serve as natural channels for wiring, heating, air conditioning, and other supply lines. This floor system permits building to far greater heights than present-day reinforced-concrete structures.

TOMORROW'S SKYSCRAPER:

new spaciousness and height with concrete

"Today's city planning seeks to make more use of air space to create less crowded ground space. Tall buildings of reinforced concrete can help provide airy spaciousness—inside as well as out. The buildings you see require no interior columns, resulting in new spaciousness and flexibility. Such multi-story buildings of reinforced concrete can be built with economy and speed, are completely fireproof and adaptable for many uses—another example of how concrete meets the needs of civic planning and building."

BOYD ANDERSON, AMMANN & WHITNEY, Consulting Engineers.

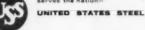
One of a series of advertisements being presented in national magazines by Universal Adas—to promote interest in architectural contributions for a greater America through the medium of concrete. For more about this building method, write to Universal Atlas, 100 Park Avenue, New York 17, N. Y.

UNIVERSAL ATLAS CEMENTS

ATLAS PORTLAND CEMENT
UNIVERSAL PORTLAND CEMENT
ATLAS DIREPLANTIC PORTLAND CEMENT
BUTCHERAL FORTLAND SIZE CEMENTS
ATLAS MORTAS CEMENT
ATLAS WHITE PORTLAND CEMENTS.
ATLAS WHITE FORTLAND CEMENTS.
ATLAS LUMBATE CEMENT
UNAFLO OIL-WELL CEMENT

UNIVERSAL ATLAS CEMENT COMPANY

member of the industrial family that serves the nation-



"DNIVERSAL ""ATLAS " "DURAPLANTIC " "LUMNITE " and "UNAPLO"
Are regulated innormation of Director's Aless Common Commons.

Byrne meets all design requirements for a wide variety of

NDUSTRIAL DOORS



For industrial and commercial buildings of all types, Byrne can supply doors to meet any opening requirement.

For example, where head room is available, vertical lift doors of the type illustrated above can be furnished without limitations in width or height. Where head room may be as little as two feet above the lintel, turnover doors such as shown below can be supplied. These are recommended for openings up to 25 feet wide by 20 feet high.

Byrne Doors, Inc., with over a quarter of a century of experience in meeting closure problems of innumerable types, can offer you unequalled engineering cooperation. And the results will be seen in doors which fit openings snugly . . . which operate smoothly . . . and which require the minimum of maintenance over many years.



This Gree Catalog

provides complete information on the many types of doors produced by Byrne. Write for your copy.



BYRNE doors, inc.

1603 E. 9 Mile Road, Ferndale, Detroit 20, Mich.

Dept. r-20

101 Park Ave., New York 17, N.Y. Cafritz Bldg., Washington 6, D.C. Byrne Doors, Ltd., 381 College St., Toronto 28, Ont.

PRODUCT REPORTS



Cathedral-Trapezoid Windows

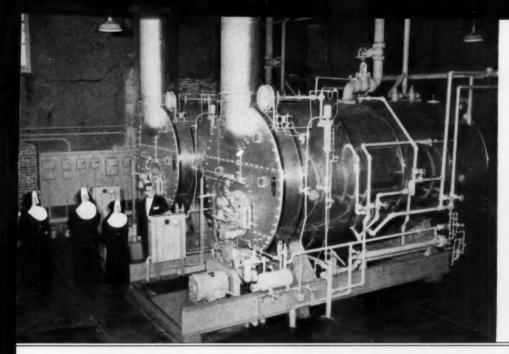
Load bearing wood frames are said to make possible the economical construction of large window-walls. Trapezoid and cathedral type windows not only fit into the pitch of the roof, but also help to support the roof itself. Offered in modular sizes for residential and commercial buildings, the window frames may also be ordered in special sizes for large structures. Fabrow Mfg. Co., 7208 Douglas Rd., Toledo, Ohio



Wall-Hanging Dishwasher

A new Tracy Thoro-Matic dishwasher. occupying only 24- by 30-in. of space, hangs on the wall to serve as either a portable or permanent unit. For portable installation, an adaptor is attached to a faucet and the unit plugged into an electrical outlet. Also available is a "Stack-On" model which can be placed at eye-level on top of a base cabinet or laundry unit to save floor space. Stacking racks roll in and out over a drop door which may be utilized as an additional kitchen work table. Both models feature a rotating cylindrical agitator said to assure efficient cleaning, and come in four colors. Tracy Manufacturing Co., 1142 The Merchandise Mart, Chicago 54,

(More Products on page 290)



NEW BOILERS combine efficiency and handsome appearance. Edward S. Green, Edgemont (Pa.), contractor, was responsible for this superior installation. Pictured : if to right are: Sister M. Cor Immaculatum, Immaculatum, Immaculatum, Immaculatum, Immaculatum, Eden Marie. Community Treasurer, Reverend Mother Maria Alma, Superior General and Salvatore S. Guzzardi, Consulting Engineer.



OLD SOILER was a coal-fired HRT model — typical of many replaced by modern Cleaver-Brooks oil, gas or combination oil/gas fired boilers.

Consulting engineer* tells how Immaculata College boiler modernization saves estimated \$12,000 each year

Salvatore S. Guzzardi consulting Engineer PHILADELPHIA 2, PA . KINGSLEY 6-2777 December 20, 1956

Mr. John C. Cleaver, President Cleaver-Brooks Company

Recently our office was retained to make an impartial, exhaustive engineering study of the 40-year old boiler plant and steam system at Immaculata College, Immaculata of the Immaculate Heart of Mary.

The average of the Immaculate Reart of Mary. ra., which is starred by the Catholic order, Sisters of the Immaculate Heart of Mary.

As a result of our recommendations, two fully automatic, oil-fired, 350 bhp

As a result of our recommendations, two fully automatic, oil-fired each, replaced three
Cleaver-Brooks package steam boilers. (12,000 lbs/hr steam each), replaced three
hand-fired coal boilers and steam-driven auxiliaries.

The new boilers are operating
at approximately 80% boiler efficiency year-round.

Conversion of coal firing to automatic at all figure and transport to automatic at approximately 80% boiler efficiency year-round.

at approximately down policy enriciency year-round.

Conversion of coal firing to automatic #6 oil firing and increased boiler efficiency has reduced the fuel cost approximately 50% -- amounting to a saving of \$12,000 each year. The Cleaver-Brooks boilers burn #6 oil and operate automatically at 80 pounds steam pressure 'round the clock -- without the presence of operators in the boiler room.

Eliminating boiler plant labor saves the College \$7,500 each year.

The cost of the boiler plant modernization will be paid for out of fuel and labor savings in approximately 2-1/2 years. Savings in approximately 2-1/2 years.

Commendation for this outstanding performance of the Immaculata boiler plant is due to your well-engineered boiler design and to the cooperation of your skilled to your well-engineered boiler design and to the Sisters subsequently to your well-engineered boiler design and to the Sisters subsequently servicemen. The results achieved were so impressive that two 100-bhp modernized their Villa Maria Convent, Westchester, Pa., with two 100-bhp cleaver-Brooks boilers.

Sakatre S Buggardi

Award-winning head of an organization of experienced professional engineers specializing in modernizing power service facilities. Clients include: Pennsylvania University, Baldwin-Lima-Hamilton Corp., H. Daroff & Sons, Sun Shipbuilding & Dry Dock Co. and City of Philadelphia.

*Salvatore S. Guzzardi —



ORIGINATORS OF SELF-CONTAINED BOILERS

Surveys show 32% of boilers now in service are 30 years old; 56% are over 20 years old

If your boiler fits this description, we recommend an immediate survey, "In 90% of the plants surveyed," summarizes Mr. Guzzardi, "we have found it possible to save thousands of dollars and to pay for the recommended improvements out of annual savings within one to three

Again and again the proved economy of Cleaver-Brooks four-pass, forced-draft boiler design results in savings reports as impressive as this. Contact your nearest Cleaver-Brooks representative for more facts on the complete line of steam and hot water boilers — 19 sizes, 130 models, 15 to 600 hp — for heating or processing. Or write Cleaver-Brooks Company, Dept. C, 362 E. Keefe Ave., Milwaukee 12, Wis., U.S.A. Cable Address: CLEBRO—Milwaukee—all codes

PRODUCT REPORTS

Adjustable Fixture Hanger

The new Guth Micro-Hanger for fluorescent lighting fixtures can be adjusted vertically up or down one inch to align and level fixtures in continuous rows or individual unit installations. The Micro-Hanger includes a special ball socket for flexible mounting in any direction on ceilings up to 40° slope, and the ½ in. hanger stem is available in six lengths. Edwin F. Guth Co., 2615 Washington Blvd., St. Louis 3, Mo.



Step-Down Ceiling Diffuser

New round and square step-down ceiling diffusers feature a spring-loaded damper set to permit easy system balancing in addition to full shut-off without quadrant dampers. The step-down vanes are engineered to provide the most effective air distribution pattern. Maximum free area with minimum air resistance is provided by straight edge design of the vanes, while recirculation of room air is induced by curved contour vane design. Both the round and square styles are available without damper control for efficient use as return air faces on all perimeter systems. The Auer Register Company, 6600 Clement Are., Cleveland 5, Ohio.



How to Flash and Waterproof with **PERMANENT COPPER** for less than 15° PER SQ. FT.

Copper Armored Sisalkraft is reenforced waterproof paper coated on one side with pure copper. You get *pure* copper protection at low cost for all concealed flashing: over spandrel beams, on parapet walls, door and window flashing, in shower stalls, boiler and shower rooms.

Copper Armored Sisalkraft can be applied rapidly and easily. It is workable at any temperature and bonds well. It is permanent . . . non-corroding . . . proven.

American SISALKRAFT Corporation

Chicago 6 • New York 17 • San Francisco 5

Other Products in the SISALKRAFT LINE

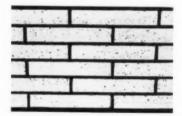
Orange Label Sisalkraft
Waterproof, reenforced building paper
Sisalkraft Molstop
Permanent vapor barrier

Sisalkraft Vaporstop
Rot resistant vapor barrier

Sisaletion
Reflective insulation and vapor barrier
Sisalite
Pure polyethylene film
Sisal-Glexe
New plastic glass replacement

Tubeless Ground Safety Alarm

A tubeless A.C. ground contact indicator now available for hospital operating rooms and similar hazardous places detects a grounded conductor in circuits feeding ungrounded systems. Less than two milliamperes leakage current will trigger both audible and visible alarms when any such systems become grounded The ground contact indicator is available separately or with necessary isolating transformers and distribution panels for ungrounded systems. Gemoo Electric Co., 25681 W. Eight Mile Rd., Detroit 19, Mich.



Cork Brick Wall Surfacing

A new brick-like cork surfacing for interior walls consists of individual bricks measuring 12 in. long by 2 in. wide and 3% in. thick. Cork brick can be applied to all types of new or old walls including wood, plaster, fiber board, cement and concrete building block. It comes in Surf White, Rose Quartz, Beach Sand and Russet Red. Dodge Cork Co., Inc. Lancaster, Pa.

(More Products on page 292)





Thousands of products have borne the P&S label during Pass & Seymour's more than 65 years of wiring device leadership. Their consistently high quality has made the P&S name synonomous with fine wiring devices. That's why discerning architects and engineers specify "P&S... the mark of Quality."

Duplex Convenience Outlet No. 1530 is a specification wiring device designed for long, heavy-duty life. Rated at 15 Amps., 125 Volts, it has double grip contacts, T-slots and washer ears. Strap enclosed and completely insulated as an added protection against shorting or arcing in outlet box. Available in either Ivory or Brown.

For information about these and other quality P&S products write Dept. AR-17.





AC SWITCHES

OLARIZED



60 E. 42nd St., New York 17, N. Y. 1229 W. Washington Blvd., Chicago 7, III. In Canada; Renfrew Elec. & Refrig. Co., Ltd., Renfrew, Ontario

MAKE THE COMPLETE JOB COMPLETELY P&S

PRODUCT REPORTS

Sliding Door Hardware

Steeline hardware for residential sliding doors can be used on doors of either 34 in. or 13% in. widths by simply reversing the heavy gauge steel hangers and changing the position of the heavily embossed aluminum track. A screw-in system with a hanger adjustment screw and a set screw is said to allow maximum efficiency in hanging and adjusting doors. Yale & Towne Mfg. Co., Chrysler Bldg., New York 17, N. Y.



Fabricated Rail Pile

A new type of foundation pile is fabricated from three steel rail sections welded together at base edges to form, in cross

section, a hollow equilateral triangle with rail heads extending outward at 120 degrees. This gives the pile a generally symmetrically section with its section modulus approximately the same around any axis, and concentrates the metal at the rail heads which are the flanges of the section. According to the manufacturer, field tests showed that the resulting pile effectively resists forces from any direction, and can push aside obstructions or punch through tough strata without damage or deflections. Bottom driving plates are usually not necessary, and the pile can be driven without mandrels or other special equipment. Supplied in sizes ranging from 60 to 133 lb per ft, and in lengths from 28 to 39 ft or multiples, the sections can be butt-welded in the field for especially deep driving. L. B. Foster Company, Delawanna, N. J.



Home Cooling Fans

Oscillating louvers that change the direction of air flow 14 times each minute are a feature of two 20-in. Airsweep home cooler fans. The louvers, which are operated by a separate motor, are said to eliminate hot spots by directing air to all parts of a room, keeping all air in circulation. They can be set to work automatically in conjunction with the fan's thermostatic control, or set to any given position. The fans may be used in a window, or on floor or table. Lasko Metal Products, West Chester, Pa.



Insulated Wall Panel

The 16 in. Fenestra insulated wall panel is being discontinued in favor of a 24 in. panel, designated Type, "C", with a depth of 3 in. and lengths varying from 6 to 14 ft. The panels, consisting of two formed metal members pressed together to form a single unit, are filled with borosilicate glass fiber insulation, to deliver a U factor from .16 to .19 depending on the metal used. Fenestra, Inc., 3319 Griffin St., Detroit 11, Mich.

(More Products on page 296)



20310 Kinsman Road

COMPANY

Cleveland 22, Ohio



Mr. Knott (right) at the location of his Riverview Homes project in southwest Baltimore, Md., with Earl Schultz, Sr., Construction Superintendent.

"Concealed telephone wiring helps us sell homes"

-says Mr. Henry J. Knott, President, Home Builders Association of Maryland

"We believe that concealed telephone wiring is a strong sales feature." says Mr. Knott, "and its importance is growing every day as home buyers learn to ask for it.

"Concealed telephone wiring itself is a salable item that pleases customers. But it is more than that. Because it helps preserve the interior beauty of a house, it makes the house as a whole more salable. In the Home Builders Association of Maryland, we recommend concealed telephone wiring to all our members."

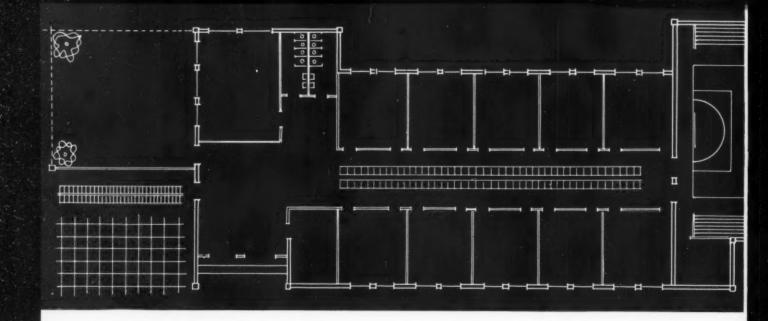
The progressive Home Builders Association of Maryland has a growing membership of 490 members. Last year in Baltimore City, and in Baltimore and Anne Arundel Counties, they built more than 14.000 homes. Trend-minded builders in the Association, and many others across the country, are convinced of the increasing value of concealed telephone wiring as a quality sales feature.

Your nearest Bell Telephone business office will help you with concealed wiring plans. For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.

Working together to bring people together

BELL TELEPHONE SYSTEM





Before completing your school plans... check all the areas where Brunswick can serve you

While your school is still in the blueprint stage . . . or earlier . . . is the time to review the complete Brunswick line. Call on Brunswick for the solution to virtually any problem involving seating, storage and space-saving. You'll find that nobody knows school equipment like Brunswick for no other manufacturer offers such a broad range of products. You'll find, too, that there is economy in the long run when you call on Brunswick. Classroom seating and work surfaces, movable classroom cabinets, folding gym seating, folding partitions . . . the entire line . . . all are designed to make your school function more efficiently.

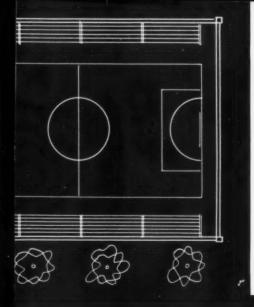
Your Brunswick representative is prepared to work with you right from the start. He can prove that nobody knows school equipment like Brunswick. He can prove that just one line continues to set the pace . . . Brunswick. Why not put him to work on your problems, today!

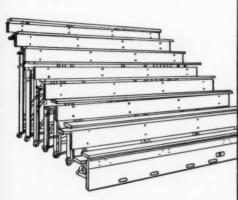
> Brunswick service includes classroom layout as well as all detail work showing the installation of such equipment as folding gym seating and folding partitions. Be sure you take advantage of this when planning your new school.

New additions to the Brunswick line include these two special-purpose cabinets: an audio center and a movable workbench.

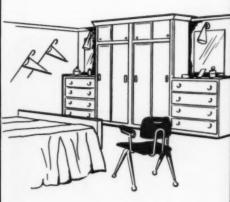




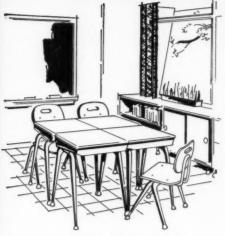




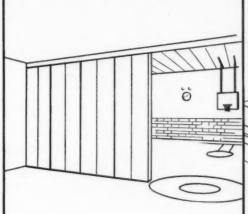
FOLDING GYM SEATING



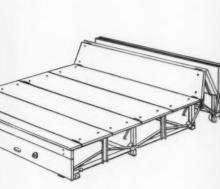
CLOSET WALLS



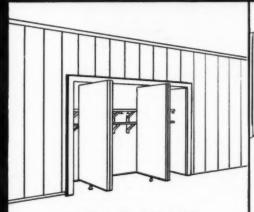
CLASSROOM FURNITURE



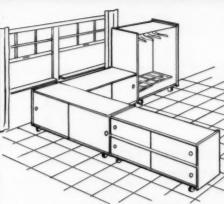
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FOLDING STAGES



FOLDING WARDROBES



MOVABLE CABINETS



FOLDING BACKSTOPS

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Brunswick

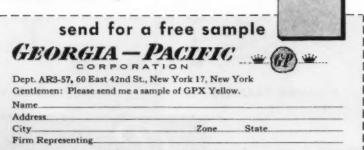


GPX YELLOW

PLASTIC SURFACED PLYWOOD

Mr. Builder, board-and-batten, so popular with today's home-buyer, is a real profitmaker for you with GPX Yellow. Easy-to-handle panels cover large areas fast. Battens cover edges. Your economies continue right through to the finish—GPX Yellow is engineered to take paint without sanding or sealing. Two coats give a lasting beautiful finish that will never check. For gables, soffits, shutters—for unlimited interior uses, too—GPX Yellow can be machined, drilled, nailed, patched, riveted, glued or sawed. Put it to the test on your next job.

Smooth! The CreZon surface of GPX Yellow is bonded on one or both sides with a phenolic resin overlay. Engineered for paint—it's the smoothest surface obtainable. Standard 4'x8' panels are available in thicknesses ranging from 5/16" to 3/4". Larger sizes and thicknesses at extra charge.



PRODUCT REPORTS

Wood Finishing Product

Deft Natural Wood Fix is a non-wetting agent that "sets" the raw wood tone. Applied as a first coat, it holds the original color and prevents the finish coat from darkening the wood. Wood Fix may be brushed or rolled on. First coat dries in one hour, second coat in two hours. Desmond Brothers, 1826 W. 54th St., Los Angeles 62, Calif.



Self-Curing Compound

A new compound can be flowed onto bolted or riveted flanges and lapped metal sheets to seal against air, dirt, water, oil, corrosive fumes and liquids. The material gradually cures into a tough elastic gasket, providing a permanent weatherproof seal. Especially suited for air, fume and heating ducts, the N-99 neoprene sealing compound is available in cardboard cartridges for application by hand or special air operated guns. Gates Engineering Co., Wilmington, Del.



"Unhanded" Sliding Doors

The Capri "Cadet" all aluminum sliding glass door features two-piece tension mounted, interlocking stiles that allow the units to be installed to slide either to the right or left. The direction may be designated at the time of installation and changed at any time without additional hardware or equipment. Weatherstripping, and placement of the sliding door outside the stationary door, is said to eliminate leakage at stiles and threshold. T. V. Walker and Son, Inc., 217 North Lake St., Burbank, Calif.

(More Products on page 300)



Porcelain enamel fired on steel at 1550°

Weis Vitre-Steel compartments are porcelain enameled inside and out for a lifetime of beauty and utility. Exposed surfaces are then refired in your choice of Weis Vitre-Steel colors. Glass hard, AA Grade, acid-resisting Vitre-Steel withstands not only normal everyday usage, but is highly resistant to acids, cleaning compounds and even defacement. Perfect for hospitals, schools, offices, factories . . . wherever you install them. Available in ceiling-hung type as shown, or floor-braced styles.



WRITE FOR NEW COMPLETE CATALOG

HENRY WEIS MANUFACTURING COMPANY, INC. 357 Weisteel Building, Elkhart, Indiana

SPECIFICATIONS: Panels, stiles and doors shall be flush construction, and shall be made of two face plates of not less than 18-gauge enameling iron with formed edges, comented under pressure to fiberboard core and joined by welding abutting edges at suitable intervals. Edges shall be bound with die-drawn stainless steel moldings interlocked under tension onto formed edges, mitered and welded at corners and welds ground smooth. Partitions and doors shall finish 1" thick; stiles shall finish 1¼" thick.

All surfaces, concealed and exposed, shall receive a vitreous porcelain enamel ground coat. All exposed surfaces shall then be given a cover coat, in a color selected from the Weis color chart of decorator colors.

Doors shall be hung on wers gravity hinges with upper hinge mounted in recess in edge of door. Doors shall be fitted with slide bar latch, combination keeper and bumper and coat hook with rubber-tipped bumper, all to be brass, chromium plated. Latches and coat hooks shall be attached with theft-resistant screws.





COMBINATION









UNIVERSAL BEARING GRAVITY TYPE BOTTOM DOOR

NEW – the <u>only</u> complete master handbook of Timber Design and Construction!



SPECIAL NEW MATERIAL OF VITAL INTEREST AND VALUE Much of it never in print before!

Complete discussion of preliminary design considerations
Comprehensive coverage and examples of truss types and proportions
New data on glued-laminated and Lamella arch design
New data on composite timber-concrete decks
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Outlines and discussion of specification forms
Complete design standards and specifications for thousands of applications
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TIMBER DESIGN AND CONSTRUCTION HANDBOOK

Prepared by Timber Engineering Company, engineering and research affiliate of the National Lumber Manufacturers Association.

Timber Design and Construction Handbook is truly indispensable to anyone concerned with wood design and construction. Serves two definite purposes: It is a comprehensive timber design reference, and it is also an extremely practical field handbook. Offers every piece of essential information needed to develop and construct the best, most economical wood structures.

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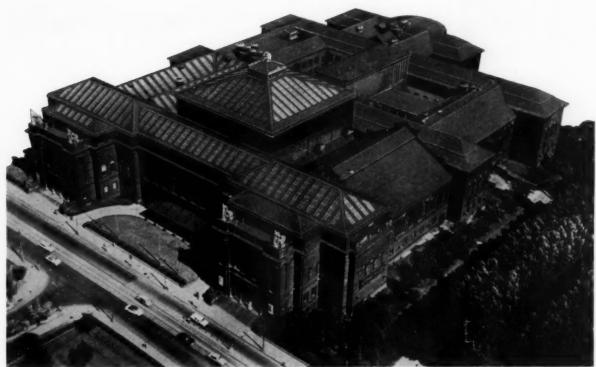
In preparing this vital new work, 25 leading specialists of recognized professional ability in lumber, wood products and allied industries have contributed their experience, working as authors, advisors and editors. A special 9-member editorial committee, which included staff members of the Timber Engineering Company, exhaustively reviewed and edited the material into the eminently practical form in which it appears in this book.

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4½-ACRE ROOF of famed Carnegie Institute gets handsome, low-cost green Aladine finish. Not only is the new roof beautiful to look at, but the patented Overly type "B" batten roofing system and skylights are maintenance-free. Architects and engineers: Charles M. and Edward Stotz, Pittsburgh, Pa. Fabricated and installed by Overly Manufacturing Company, Greensburg, Pa.

ACP Alodine - BEAUTIFUL, LASTING COLOR FINISHES FOR ALUMINUM

Wherever you use aluminum—on roofs, in curtain walls, as a decoration—it pays to beautify and protect the metal with ACP Architectural Alodine. The chemical coating formed by this ACP product becomes an integral part of the metal, inhibits corrosion,

provides an attractive and lasting color finish. ACP Alodine finishes are available in a range of shades varying from natural to a deep green imitating the mellow patina of weathered copper. It also materially reduces glare, is economical, and is easy to apply.



INDUSTRIAL ROOFING, too, can be treated with ACP Architectural Aladine to protect the metal and give the appearance of weathered copper or assume a soft, mellow sea-green.



INDUSTRIAL SIDING is another product used in building construction which can be treated with ACP Architectural Alodine to beautify it and protect it.



LEARN MORE ABOUT ACP ALDDINE Write for a file folder covering architectural applications of Alodine and showing samples of the sunfast colors available.

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PRODUCT REPORTS



Ribbed Plastic Panels

Chem-O-Glas reinforced plastic panels are press-molded for greater uniformity. Ribbed panels come in king-sized units approximately 4 ft wide by 12 ft long with ribs 8 in. apart, or in standard units 32 in. wide and 8 ft. long with ribs 4 in. apart. Flat panels are 32 by 96 in. The ribbed panels are provided with overlapping joints for easy installation. Suitable for either indoor or outdoor use as structural or decorative building units, the panels are available in virtually any color, although stock colors are translucent blonde, green, copperglo and yellow, and opaque blonde and white. Chemold Co., 2000 Colorado Ave., Santa Monica, Calif.



Modular Kitchens

Three new modular kitchens incorporate complete meal preparation and clean-up centers in 7 and 9 foot units. Such built-in appliances as range surface units, plug-in griddle, oven and rotisserie, dish-washer, sink and faucet, deep well cooker and small-appliance outlets are built in to a continuous stainless steel top that rests on base cabinets. The units come in five colors, with right- or left-hand models to fit any kitchen plan. The one-piece stainless steel top and sink is also available as a separate unit without built-in storage cabinets. Holpoint Company, 5600 West Taylor St., Chicago 44, Ill.

(More Products on page 304)



ADVANCE VISA VOLT

Now, Advance Transformer Company brings you VISA-VOLT® color coded fluorescent lamp ballasts for instant, positive voltage identification. VISA-VOLT®, another first for the world's largest exclusive manufacturer of fluorescent lamp ballasts, does away with uncertainties by clearly defining circuit voltage, line carrent, lamp current and other pertinent electrical data. VISA-VOLT® is your assurance that the correct ballast is being utilized in a specific lighting installation.



Insist on VISA-VOLT® color coding and eliminate costly guess work in your next fluorescent lighting installation. VISA-VOLT® color panels are keyed:

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TAN—208 VOLTS
GREEN—220 VOLTS

ORANGE-236 VOLTS

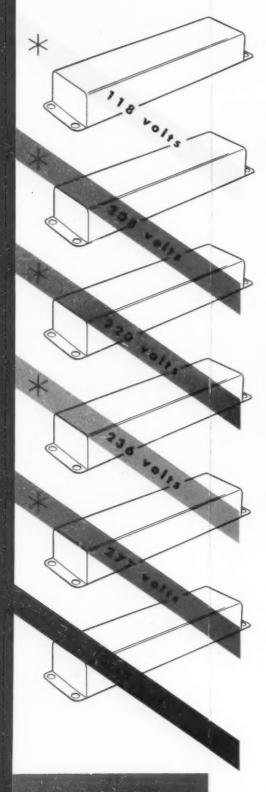
RED-277 VOLTS

BLUE-464 VOLTS

Start today to enjoy the many advantages of Advance quality fluorescent lamp ballasts . . . ballasts which provide longer life, quieter operation, higher light output, trouble free operation, CBM certification . . . fluorescent lamp ballasts which are guaranteed and continue to serve as "The Heart of the Lighting Industry".



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Through outstanding engineering developments and modern manufacturing facilities, ADVANCE 'TRANSFORMER COMPANY has become the world's largest manufacturer devoted exclusively to the production of quality fluorescent lamp ballasts. These precision built, power regulating instruments supply exacting amounts of electrical energy for the efficient operation of all fluorescent lamps and are aptly called "THE HEART OF THE LIGHTING INDUSTRY."

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For anyone who manufactures, specifies, installs or uses fluorescent lighting, ADVANCE TRANSFORMER COMPANY has prepared helpful literature which will be sent without cost or obligation. You may receive a copy of one or all of these brochures by mailing the coupon below.

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No other ceiling pan fixture on the market today has all these engineering features:

- · Globe opens on hinge for quick easy cleaning and relamping.
- Unique safety locking fitter holds globe in place without bothersome screws, unsightly extensions or trick springs. Globe is secured with lugs by simple twist of the wrist.
- Lip of globe is completely protected against breakage by a steel protector ring.
- Provides ceiling illumination as well as evenly distributed floor lighting.
- · Minimum amount of metal, maximum amount of glass results in highest light efficiency.

Here is a unique ceiling pan fixture design for either commercial or residential installation. For further information send for The Perfectite Data Sheet 56-C today.

Perfectite's new hammer lock fixture is available in the following sizes:

| | Model | Glass del Diameter W | |
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| pratterini . | HH-9 | 8" | 2- 40 W |
| | HH-11 | 10" | 2- 60 W |
| 1-5 | HH-13 | 12" | 2- 75 W |
| | HH-15 | 14" | 2-100 W |
| | HH-17 | 16" | 3-100 W |

Fixtures are Underwriters Laboratories, Inc. approved. *Patent pending

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EMERGENCY LIGHTING SYSTEM



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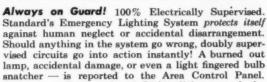
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Always on Guard 100% Dependable

The only system of its kind listed by UNDERWRITERS' LABORATORIES, Inc. Exceeds Requirements of the NATIONAL ELECTRICAL CODE

A complete, self-policing emergency lighting system that guards against costly confusion or panic caused by sudden darkness.

Takes over in a split second! The instant power fails for any reason, at any time, Standard's centralized system goes to work automatically — provides instantaneous Emergency Lighting in effected areas. Work schedules or business continues without interruption.



Buzzers buzz! Lights light — and the trouble can be corrected before a lighting emergency arises.

Always on Guard! The Flexlab Nickel-Cadmium, alkaline battery has an expected life of more than twenty-five years, requires near-zero maintenance, does not corrode like lead-acid batteries.

This new and unique Emergency Lighting System is streamlined, good looking, designed to match the decor of modern buildings. Centralized power and control, concealed wiring and handsome fixtures replace box-on-the-wall units. Standard's Emergency Lighting System is built-in just like the fire alarm and sprinkler systems.

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PRODUCT REPORTS

Fiber Glass Switch Box

The FRP switch box is produced entirely of fiber glass reinforced polyester for maximum strength, and fire- and corrosion-resistance. It is completely insulating and on many circuits eliminates the necessity of grounding. Available with or without clamps, the new switch box is also supplied as a utility box, or with mounting ears for old work or hanger brackets for new work. Porcelain Products, Inc., Findlay, Ohio.



One Lamp Shielded Fixtures

A series of one lamp shielded fixtures for recessed and surface mounting has been added to the *UniLite* line. Both recessed and surface models come with four and eight foot channels, die-formed and welded of 20 gauge steel. Constructed to provide continuous wireways for continuous mounting, the fixtures can also be mounted individually. Both come completely assembled, ready for installation. *Electro Silv-A-King Corp.*, 1535 S. Paulina St., Chicago 8, Ill.



Thin Masonry Veneering Unit

Redibrik is a new machine-compacted masonry unit the size of Roman brick, but only ½ inch thick. Each unit has a self-contained mortar joint provided by integral flanges on the top and left sides. Aimed primarily at the remodeling market, the units can be applied over existing masonry or over metal lath, and require no extra footings and foundations. A range of 15 colors is available. Redibrik Industries, Inc., 341 Ottawa Ave., Holland, Mich.

(More Products on page 308)



Norman Gas-Fired Schoolroom Heating and Ventilating System

In one complete package for the individual classroom, Norman engineers have designed everything needed to assure economical and healthful classroom comfort — automatically.

And, because the Norman gas-fired, forced air heating and ventilating system is specifically designed for modern schools, it offers important advantages for new school construction and expansion programs. No separate building or extra space is needed for a central heating plant. Simplifies expansion programs — just add another Norman unit for each additional classroom.

Mail the coupon today for complete details and specifications.





products company



NORMAN COMPLETE PACKAGE PROVIDES:

- Perimeter forced air distribution at proper angles for constant classroom comfort without draft or stale air pockets.
- Automatic operation cycles which include warm-up, daytime or occupied period, and nighttime period.
- Automatic ventilation with proper mixture of outdoor air and room air.

NORMAN COMPLETE PACKAGE INCLUDES:

- Automatic gas-fired, forced air central heating furnace and enclosure, pre-wired and fire-tested at factory.
- Standard length Util-i-Duct sections of sturdy furniture gauge steel, shipped ready to install. Each section includes quality adjustable perimeter diffuser . . . aluminum trim for front top edge . . . resilient gasket for back top edge. (Filler and corner sections available.)
- Electrically controlled multi-blade air damper assembly for automatic inside and outside air modulation.
- Rugged aluminum outside weather grilles and mounting frames for fresh air and combustion air openings.
- Automatic controls for complete modulation of heating and ventilation air requirements.

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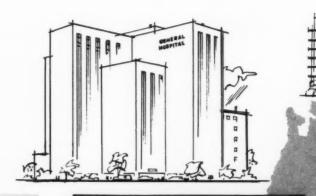
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| | te information and specifications on the Schoolroom Heating and Ventilating Package. |
| THORMAN GOVERNOUS | chonoom freeling and ventualing rackage. |
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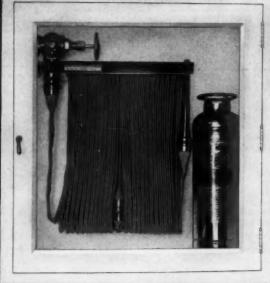
For Interior Fire Protection in Hospitals, Hotels, Apartment and Office Buildings . .

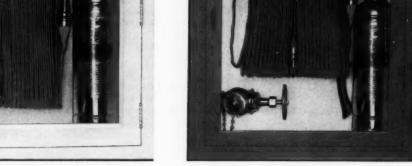
Of the various

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products and models,
these two types are
most often used
in this field—







Allenco Unit 215 gives choice of 4 hosesizes, 4 hose-lengths and other factors.

Allenco Unit 192 adds handiest watersource for use by Fire Department.

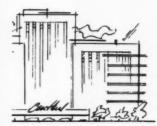
Cabinets are "custom-sized" and are available in several different groups with Allenco Hollow Steel Door, Nella Sheet Steel Door, Aluminum Doors, and other styles. Rigid and true-to-size, they go in faster . . . look better . . . serve perfectly.

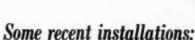
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1,245 MARLO SEAZONAIRES HEAT AND COOL MASSIVE NEW WASHINGTON APARTMENTS



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Washington, D. C.

Here's beauty, comfort and luxury in a big handsome package — the new 4000 Massachusetts Avenue Apartments, Washington, D. C., with ultra-modern accommodations in 452 apartments. Owner, 4000 Massachusetts Avenue, Inc., Washington, D. C.

Air Conditioned? Of course! And Corning and Moore, architects for the project, approved Marlo Seazonaire Room Air Conditioning Units, Remote Type—1,245 of them—to provide year-round comfort in each suite. Two Marlo Ceiling Type Air Handling Units were also specified for larger areas of the building. Total cooling capacity of all Marlo equipment is 900 tons!

General Contractor: Standard Construction Co., Inc., Washington, D. C.

Mechanical Contractor: W. G. Cornell Company, Washington, D. C.

Consulting Engineers: General Engineering Associates, Washington, D. C.

In the complete line of Marlo quality equipment you'll find the answer to every air conditioning need. Write us today for further information.



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Quality Air Conditioning and Heat Transfer Equipment Since 1925

PRODUCT REPORTS



Compressed Plate Glass Door

One-half inch thick tempered plate glass is held under compression by a thin metal frame to provide a durable, non-sagging door. Concealed bolts draw the narrow aluminum door frame together as compression is applied by means of pads and heavy steel leaf springs in the lower glazing channel, thus putting the stiles into tension and compressing the glass for increased impact resistance. The West Tension Door is available in rough or polished plate glass with a wide variety of locks and accessories, and is said to be particularly suitable for operation with automatic opening devices. Pittsburgh Plate Glass, 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.



Built-in Refrigerators

The Sub-Zero line of built-in refrigeration equipment includes seven models for large and small kitchens. Refrigerators and freezers are available in combination models or separate units that can be placed in "stack on" or "side by side" arrangements. The cabinets are complete packages that require only a roughed-in wall opening. All models are available with right- or left-swinging storage doors in a wide variety of colors. Sub-Zero Freezer Co., Inc., P. O. Box 2017, Madison, Wisc.

(More Products on page 312)

NEW PETRO BURNER FIRES LIGHT OR HEAVY OILS...

Including ALL grades of No. 5

Fires low-cost oils with traditional PETRO dependability

The revolutionary atomizing principle used in the new Petro Supercharger Burner produces the highest degree of atomization ever achieved in a burner for heavy oils. Oil and air are premixed in a supercharger, where the self-generating heat resulting from compression of the air-oil mixture, atomizes even heavy No. 5 oils into a highly volatile mist. This revolutionary Petro burner mechanically atomizes the oil, but, in addition, the supercharger further reduces the oil spray to a microscopic air-oil vapor.

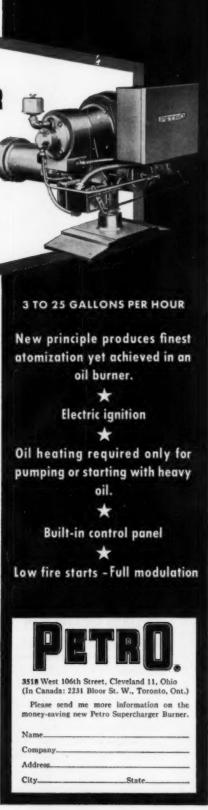
Heating of oil is needed only for starting or pumping when the heavier oils are used. Therefore, the power load is hardly more than that required to operate the motor.

Controls are available to operate this Petro burner either with continuous fire, high-low or with full modulation.

These new Petro burners are available for two important uses: either for conversion, or as a component part of a packaged boiler-burner unit. It fires low cost heavy residual oils with little more attention than a domestic oil burner.

For more information and specifications, please mail the coupon.







The glass you don't see makes this design work!

Panelized FOAMGLAS spandrel backup adds strength, rigidity; insures constant U-value for American Hardware Mutual's all-glass curtain wall

A new type of curtain wall—all glass, including the insulation—is the key to design of this new \$4-million headquarters building for American Hardware Mutual Insurance Company in Minneapolis. Designed by Thorshov & Cerny, Inc., A.I.A., the building's curtain walls consist of vision strips of plate glass separated by spandrel panels of a new opaque glass facing, Spandrelite. Behind spandrel panels and exterior columns, a panelized backup of 2" FOAMGLAS, unique cellular

glass insulation, insures constant efficiency and economy in operation of the building's heating and air conditioning systems.

The prime reason for selecting FOAMGLAS was its moisture-proof structure. Composed entirely of non-connecting, sealed glass cells, FOAMGLAS is impervious to the moisture and vapor that destroy efficiency of ordinary insulations. Its insulating performance can never vary.

FOAMGLAS also provides important structural benefits in American Hardware Mutual's curtain wall construction. Its combination of strength, rigidity, dimensional stability and light weight . . . unequalled among insulating materials . . . adds to the structural stability of the curtain. The insulation won't swell,



shrink or warp, can't sag or slump within the wall. Completely inorganic, it can't rot or deteriorate, either.

You, too, will find that FOAMGLAS is the ideal insulation for *your* curtain wall designs . . . just as it is for most other types of construction. You can quickly demonstrate to yourself the unique combination of properties that makes this true. Send today for a free sample of FOAMGLAS and complete directions for six simple "desk-top" tests which prove its benefits. Address . . .

Pittsburgh Corning Corporation

Dept. B-37, One Gateway Center, Pittsburgh 22, Pa.
In Canada: 57 Bloor St. W., Toronto, Ontario



Also manufacturers of PC Glass Blocks



PRODUCT REPORTS

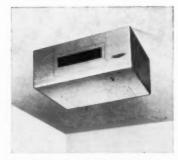
Automatic Ice Cuber

The Cube-Freeze automatic ice cuber can be used as an individual unit, or as a companion unit for the Chip-Freeze automatic ice flaker. It produces a daily capacity output of 300 lb. of standard size ice cubes. Housed in a compact vertical cabinet that keeps ice at waist level, the unit comes in a full range of colors as well as white and stainless steel. Cold Corporation of America, 1371 N. North Branch, Chicago, Ill.



Remote Cooling Evaporator

A new evaporator unit for installation with the *Lennox* remote air-cooling equipment is said not only to provide an abundance of evaporator surface but also to project this surface up into the plenum for greater cooling efficiency. Each coil assembly has an expansion valve and "eliminators" where necessary, and a condensate pan with connections for one-inch pipe. Easy access to the coils is attained by removing the triangular-shaped front panel. As in previous models, the cabinet can be installed along with the furnace and the evaporator coils themselves added at a later date. Lennox Industries, Inc., Marshalltown, Iowa.



Overhead Air Conditioning

Fedair overhead remote type air conditioning units are designed for ceiling and concealed overhead installations in multi-room buildings such as hotels, offices, hospitals and other applications where floor and wall space is at a premium. They use remote sources of water for heating and cooling, and require only three pipes — supply, return and condensate drain. Three sizes are made in capacities to fit a wide range of applications. Fedders-Quigan Corp., Heating Division, Lalor and Hancock Sts., Trenton 7, N. J.

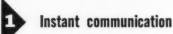


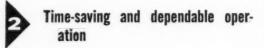
Louvered Folding Closet Doors

Fenestra folding steel doors for closets, storage walls, etc., are completely louvered to allow maximum ventilation in closed areas. Available in standard heights of 6 ft 8 in. and 8 ft with widths to meet most requirements, the doors fold back to the jambs to give full access to storage areas and conserve floor space. They come with a factory-applied prime coat, ready for painting any desired color. Fenestra, Inc., 3319 Griffin St., Detroit 11, Mich.

(More Products on page 316)







Efficiency in coordinating nurses' services

Easy installation and maintenance

Plug-in electrical components

Competitive price

WRITE FOR BULLETIN #126



ARCHITECTURAL RECORD MARCH 1957

in plumbing drainage... it costs no more for the...





series 1480

SHOCK ABSORBERS

ELIMINATE "WATER HAMMER"!

• Noisy, destructive water hammer is unpredictable—it will occur on the finest installations—it happens without warning on any water or liquid plumbing supply line—in schools, hotels, theatres, hospitals, institutions—and even in homes. Josam Shock Absorbers eliminate this disturbing noise, the possible damage to equipment, and destructive leaks in valves and connections. You get "hospital quiet" on all plumbing lines! Their cost is so little compared with the protection they provide, that Josam Shock Absorbers should be installed on every new and old piping system. Here again, it costs no more to use the best—in plumbing, you use the best when you use JOSAM! It costs less in the "long run".

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CONSTRUCTION IS FAST, SIMPLE:



All-Season Installation: Experienced Lupton crew gets fast start even in freezing cold. Building is enclosed faster; interior finishing starts sooner.



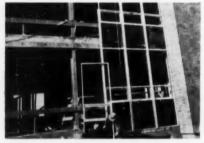
Lupton crewmen accurately align and attach continuous aluminum sill at base of wall. Clips for anchoring mullions are factory pre-set and welded.



Lupton crewman bolts mullion to structural frame with heavy galvanized steel clips. Slotted holes permit accurate alignment.



The vertical mullions that act as the "organizing element" of the wall are positioned with extreme accuracy, regardless of structural irregularities.



Here Lupton curtain wall units are positioned from outside building—convenient handling procedure for two- and three-story buildings.



Niagara County Building nears completion. Time and money saved in construction draw compound interest in minimum maintenance costs.



Aluminum Curtain Wall System:

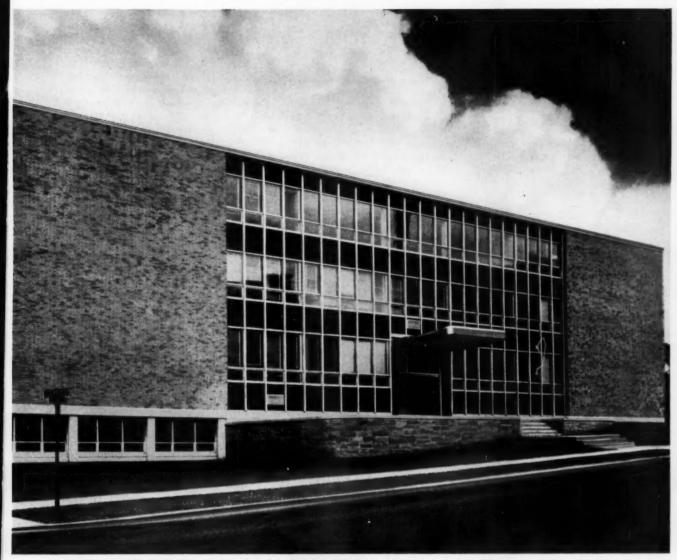
LIGHTWEIGHT LUPTON ALUMINUM WALLS

Architect-Designed: You design Lupton Curtain Walls to meet the needs of your installation. Lupton carries out your specifications by seeing the job through until the final panel is in place. You get unusual design freedom—in size and location of glazed and non-glazed areas... type of fenestration... material, color and texture of opaque areas—with the Lupton Curtain Wall System.

A Complete System: Lupton Aluminum Curtain Walls are manufactured, shipped and installed *as specified* under a single contract by one responsible organization. You get complete moisture protection, efficient insula-

tion, balanced sandwich construction to prevent distortion due to changes in temperature, on-the-spot adjustments to compensate for irregularities in the building frame.

Important Installation Economies: The Lupton Curtain Wall System makes possible considerable savings in time and money. Maximum prefabrication of large size wall units means minimum waste motion on the site. Curtain wall fabrication can be started as soon as the design has been established. Installation can begin even before the building frame is finished. Wall components



NIAGARA COUNTY BUILDING, NIAGARA FALLS, N.Y. Arch.: Charles F. Obenhack. Contr.: Walter S. Johnson Building Co. Lupton Curtain-Wall System, Type G. Width module, 4'-0". Double glazing, 1" thick fixed lights, ½" thick in ventilators. Venilators open in. Opaque areas are double panel construction. Outside face is green-black porcelain enamel laminated with honeycomb core, galvanized back. Inside face is galvanized steel sheet covering 1" thick insulation. Back-up wall to still height.

SIMPLIFY DESIGN, SPEED CONSTRUCTION

are light in weight, handle easily, go up in record time; greatly reduce dead weight load supported by structural frame. And Lupton Curtain Walls provide minimum-cost maintenance for the life of the building.

Get Lupton into your curtain wall design picture early. You'll find complete specifications listed in Sweet's Architectural File 3a/FLy. To locate the representative nearest you, look for the name LUPTON in the Yellow Pages under Windows—Metal. Or, for data sheets and Lupton help in your planning, write or wire our Philadelphia plant.

LUPTON

ALUMINUM CURTAIN WALLS AND METAL WINDOWS

MICHAEL FLYNN MANUFACTURING COMPANY

Main Office and Plant

700 E. Godfrey Avenue, Philadelphia 24, Penna.

PRODUCT REPORTS

Suspension System

Three new non-combustible systems can be used to hang mineral, fiber or metal acoustical tiles. The Nailing Channel system requires backing and can be used with most types of acoustical tiles. The H-Bar and T-Spline system mechanically fastens unbacked acoustical tiles directly to suspension bars, while the Snap-in-Tee Bar system is designed for use with metal ceiling pan units. Wheeling Corrugating Co., Wheeling, W. Va.



Masonry Spraying Machine

A versatile new masonry spraying machine said to cover a 40 by 15 ft. wall with base coat, stucco or *Colorcrele* cement finish in one hour also sand blasts, chisels and washes, all by pneumatic pressure. Material mixed in dual tanks

mounted on the machine is forced through a hose to the discharge nozzle where it meets with air from the compressor to form a spray which is spread evenly over the surface. Pressure can be regulated to produce the desired texture. The procedure is the same for all operations. The M-P Machine is a selfcontained unit with main elements dual mixing tanks, air compressor and blower, gasoline engine and starting battery - mounted on a steel-decked trailer for high mobility. Large pneumatic tires, integral hitch, and adjustable back leg add to ease of transporting and positioning. Colorcrete Industries Inc., 323 Otlawa Ave., Holland, Mich.

NEW RECORDS Center . DEPT. OF DEFENSE



MILITARY PERSONNEL RECORDS CENTER U. S. DEPT. OF DEFENSE, ST. LOUIS * ARCHITECTS, HELLMUTH, OBATA & KASSABAUM, INC. PLUMBING CONTRACTOR THOS. J. SHEEMAN

1,340,000 sq. ft. of floor space functionally planned

The architects spent months of patient study and intensive research and planning. The result is a highly integrated structure, with modern conveniences and appointments throughout.

Halsey Taylor drinking water equipment was specified to afford cool water for all employees. The Halsey W. Taylor Co., Warren, Ohio.

Cooler shown has mechanical dual controls, stainless steel top. Wall Fountain shown, as well as cooler, is typical of complete Halsey Taylor line.





See Sweet's or write for catalog

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FOUNTAINS . COOLERS

A-71

ENGINEERED THE BEST TO MEET EVERY SERVICE TEST



Weathertight Extruded Louvers

Brisk extruded aluminum louvers are designed with particular emphasis on structural rigidity, combining weathertight fabrication with simplicity of construction. Both stationary and adjustable types of louvers are available in extruded aluminum sections of a minimum thickness of 12 gauge or ½ in. as specified. The standard mill finish is protected with two factory-applied coats of methacrylate lacquer. Special finishes are also available. Brisk Metal Products, 103 Park Ave., New York, N. Y.



Dual-Action Magnetic Catch

A new dual-action magnetic catch features a reversible magnet and extra-long screw slots for easy installation on every type of cabinet door and on furniture. The strong magnetic pull and "floating action" assure firm closing, and there are no wearing parts. Amerock Corp., Rockford, Ill.

(More Products on page 320)



You Can Buy a New Luxury Car Every Year with Savings on Each Westinghouse Operatorless Elevator You Install

Automated (Operatorless) Elevators Cut Operating Costs up to \$7000 per car per year

If you're planning the construction of a new building—or thinking about modernizing an existing one—the operating economy of Westinghouse operatorless elevators is an overwhelming factor for consideration. With operatorless elevators, costs for attendant's wages, insurance, uniforms and training are eliminated . . . standard fixed charges are reduced . . . and tardiness and sickness problems are solved.

Westinghouse automated (operatorless) elevators "work" 24 hours a day . . . automatically. They operate themselves and adjust themselves to ever changing demands of building traffic . . . automatically.

So when you ask yourself, "How much do elevators cost?"—don't forget to consider the savings made possible by operatorless control.

Westinghouse elevator installations are the embodiment of prestige . . . highest achievement in comfort, safety and efficiency for you and your tenants.

Made possible by Westinghouse automation in elevatoring which produced:

- Selectomatic for master supervisory control.
- Synchro-Glide for accurate, smooth, soft landings.
- Traffic Sentinel[®] for safe, courteous yet time-saving passenger handling.
- Automatic Traffic Pattern for Traffic Controlled Elevatoring.
- Shuntless Relays and Electric-Driven Selectors for reliable operation.



Westinghouse Elevators
AND ELECTRIC STAIRWAYS

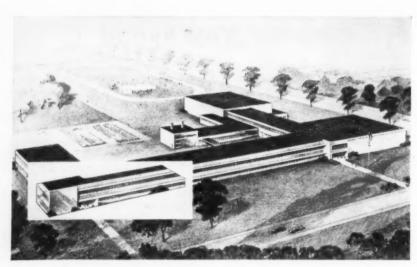
YOU CAN BE SURE ... IF IT'S Westinghouse

J-98730B



Here's the job where Pittsburgh Steeltex made the substantial saving in the number of days required to prepare for and pour a 2½-inch concrete roof slab, measuring 64 x 220 feet. The project is the Ecorse Elementary School in Trenton, Mich. Contractor: The Charlson Company. Architect: Giffels & Vallet, Inc., L. Rosetti, Associated Engineers and Architects.

"Steeltex saved 61/2 days on 14,000 sq. ft. roof deck"



Architect's aerial perspective of the whole school unit, including the elementary school (shown at left) which was constructed as the first segment of the entire job.

A Michigan contractor saved 6½ days on a school construction job by using Pittsburgh Steel Products' Steeltex Floor Lath.

The Charlson Company of Wyandotte, Mich., took only 28 hours to cover the roof area with Steeltex before pouring a 2½-inch concrete slab. The job was complicated by numerous columns and other irregular shaped objects on the roof.

William Johnson, construction superintendent, said use of Pittsburgh Steeltex—the wire mesh reinforcing that carries its form right on its back—permitted his men to start laying the material on a Wednesday morning and complete the job Monday noon, just 3½ days later.

He estimated use of other forms would have taken a good two weeks before concrete could have been poured. The ease with which his men fitted Steeltex around pipes, columns and irregular shaped objects made the







Photographs above and at right show some of Steeltex's money saving advantages. 1. Rods welded to joists eliminate diagonal bridging. Steeltex and concrete give joists lateral stability. 2 and 3. Steeltex, cut and bent easily and quickly, made it possible for one man to cover this special depressed area in a few minutes. John Casey, architectural superintendent, points to neat, finished job. 4. It's easy to fit Steeltex snugly around columns. 5. Round or irregular shapes pose no problems because Steeltex fits snugly, keeps concrete from dripping through.

time savings possible.

To make the achievement even more remarkable, the Charlson men had never before used Pittsburgh Steeltex. But the workmen needed no other instructions than the printed directions which accompany every 125-foot roll.

Steeltex, sold by the Pittsburgh Steel Products Division of Pittsburgh Steel Co., was specified by Giffels & Vallet, Inc., L. Rosetti, Associated Engineers and Architects, of Detroit, Mich.

The specification pleased President K. H. Charlson of the Charlson Company, who said:

"Steeltex definitely was the best choice. It is a good product that is easier to cut and shape than other centering material. The paper backing reduces dripping and eliminates cleanup problems on the floor below.

Steeltex is economical to buy, saves a lot of costly, time-consuming work and produces a high quality concrete slab with good reinforcing.

The Ecorse Elementary School job calls for the first segment now under construction to become eventually part of a much larger complete school unit, including a high school and a iunior high.

Since the elementary school will have a second floor later on, its roof deck will become the floor of the planned second story.

That meant columns for the new roof had to be left protruding from the present roof. These columns offered no problem to Steeltex. It took one

workman only a minute or two to cut the mesh and fit it around each column as he came to it.

A long depression in the roof deck (see photographs) had to be left for sanitary facilities on the proposed second floor. One man covered this long gap, measuring more than 20 feet long and two feet wide.

You, too, can reduce costs and pour concrete decks quicker while improving the quality of floors and roofs-when you use Steeltex.

Special advantages of Steeltex can work as well for you as for this Michigan architect and the contractor.

A trained Pittsburgh Steel Products engineer, with lots of construction know-how, is available close at sales offices listed here. Do it today.

hand. Call him at any of the district



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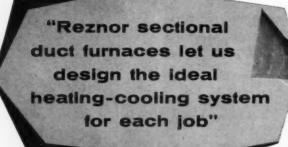
Pittsburgh Steel Products

a division of Pittsburgh Steel Company

Grant Building . Pittsburgh 30, Pa.

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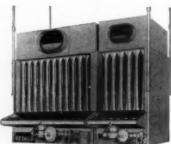
"We'd never been able to design a really ideal heatingcooling system until Reznor introduced their sectional duct furnace. And even if we had designed one, installation problems would have been stymied until the Reznor sectional duct furnace came along.

"Sectional assembly eliminates the installation problems which formerly prevented the use of large capacity custom-engineered duct systems. With the new Reznor DS sectional duct furnaces, we can specify system capacities of two million BTU or more knowing that they can be assembled on the job from sections weighing no more than 315 pounds.

"Reznor sectional duct furnaces free us completely from packaged heating equipment which isn't exactly right for any one job because it has to be almost right for so many jobs. Now we start with a Reznor duct furnace, which is simply nothing more than a compact, highly efficient gas-fired heat exchanger with a complete set of combustion controls. To this we add the components for air moving, cooling, cleaning, and humidifying selected to meet exact job requirements. For our client it means greater efficiency, greater comfort, and lower cost.

"Reznor sectional duct furnaces are a heating engineer's dream come true... and our long experience with Reznor gas unit heaters gives us complete assurance that these new duct furnaces will be tops in efficient performance, dependable service and long life, too."

If you're not taking advantage of the design freedom these new units offer you, you're really missing something. Write today for free catalog or call your nearby Reznor distributor for details. You'll find him listed under "Heaters-Unit" in the yellow pages of your telephone directory.





PRODUCT REPORTS



Baseboard Wiring System

Baseduct provides a complete electrical wiring system at baseboard level, with duplex receptacles every 30 or 60 inches. Only three inches high, it comes in 5 ft lengths that are installed directly on the floor and extend out ¾ in. from the wall. Mounting holes in the base make it possible to install the system with only three fittings; an end blank, a combination internal and external elbow for corners and a standard coupling. The preassembled wiring harness is contained within the body of the duct without retaining clips or similar accessories. Receptacles feature "straight-through" passage of wire that permits installation of the multi-outlet assembly without screws or weld points. The metal panel is finished in gray and may be painted any desired color. National Electric Products Corp., Gateway Center, Pittsburgh, Pa.



Double-Width Plank Flooring

In Micro-Match flooring, odd length strips of conventional hardwood flooring are joined with precision end-matching and glued dovetail side joints to create double-width planks in uniform lengths of 8, 10 or 12 feet. The composite board is said to possess greater structural strength than standard flooring, and to reduce laying time by as much as fifty per cent. The pre-sanded planks come in white or red oak. Miller Brothers Company, Inc., Johnson City, Tennessee.

(More Products on page 324)

A reflection of good taste



New in concept and design

Here is *new* beauty to delight the eye — Hall-Mack's Concealed Vanity Shelf. Blends easily with any bathroom decor — with any style or color. Dramatic in concept and clean in design, this handy unit provides ample space to keep bathroom necessities out of sight, yet within easy reach. Holds electric or blade razor,

Sold by leading plumbing, tile

and hardware dealers everywhere

soap, tumbler, toothbrushes, medicines or toiletries—and has an electric outlet for shaver or other use. It's decorative—as well as convenient, with sliding mirror panels in a chrome frame. In any home—this new Concealed Vanity Shelf will be *practically* beautiful... a reflection of good taste.



Easy to Install — the recessed Concealed Vanity Shelf can be placed in any of several locations for your greater convenience. It is ideally located at the lavatory — between the top of the basin and the bottom of the mirror.

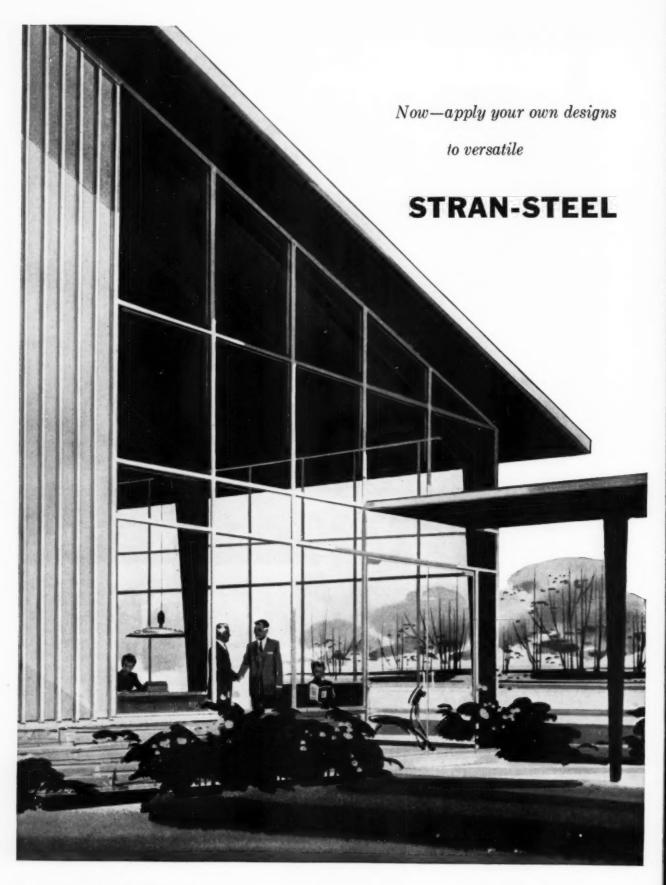
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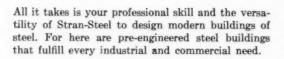
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ARCHITECTURAL RECORD MARCH 1957



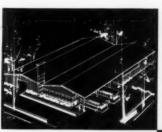
BUILDINGS

for attractive, low-cost industrial and retail structures



Modern in looks, rugged in quality, flexible in design, the new line of Stran-Steel buildings is equally handsome as manufacturing plants, warehouses or retail stores. Distinctively styled in the long-lasting beauty of steel, these buildings offer limitless design potential with exteriors as you like them—sleek, striking and contemporary. And the smooth luster of the Stran-Satin walls blends beautifully with other building materials such as brick, stone, glass or wood, giving the look of luxury to low-cost construction.

But the beauty of Stran-Steel buildings is more than skin deep. There's a whole roster of plus features. Economy is one. Because Stran-Steel buildings are pre-engineered and precision built at the factory, construction time is shorter, costs are much lower.









Rugged quality is another advantage these steel buildings offer. They're durable and weatherresistant. And, of course, they're non-combustible. For temperature control and comfort they can be insulated easily and inexpensively.

Engineered for efficiency, Stran-Steel's interiors are spacious and flexible. Fewer columns and unobstructed clear-span areas not only provide maximum floor space but permit more profitable use of this space as well.

Now you can give your clients all these practical features—and more—by specifying Stran-Steel construction. No wonder more and more leading architects are adapting the versatility and elegance of Stran-Steel for truly distinctive modern buildings. Available in widths of 32, 40, 50, 60, 70 and 80 feet or multiples thereof, in 20-foot bays.

If you would like further information regarding the new line of Stran-Steel buildings, simply mail the coupon printed below.



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Stran-Steel Corporation, Detroit 29, Michigan

- Please send me the new Stran-Steel Industrial Buildings Catalog.
- Please have your representative contact me.

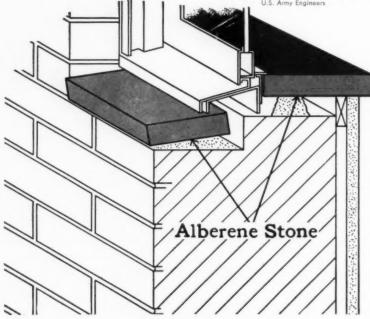
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Company

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U. S. Soldiers' Home, Washington, D. C. Serpentine Spandrels and Window Stools Architects: Porter & Lockie, Washington, D. C. U.S. Army Engineers



Let's talk "NON-STAINING"

Window sills and stools can be durable as well as attractive.

Alberene Stone is the only natural silicate stone with the surface that goes all the way thru. Its low-absorbency, all-silicate mineral components provide the best obtainable chemical resistance. It is not stained by salt, grease, oil, fruit juice or alcohol which simply add lustre when wiped dry. It is not discolored by metallic rust or window sash condensate drip.

Alberene Stone is also weatherproof. Its low absorbency, fine grain and absence of stratification prevent chipping and cracking in freezing weather.

Alberene Stone can be shipped normally in 60 days—or sooner if necessary. For information and technical assistance, address: Alberene Stone Corporation, 419 Fourth Ave., New York 16, N. Y.

ALBERENE STONE

provides LOW ABSORBENCY protection

PRODUCT REPORTS

Geometric Lighting Fixtures

The Modu-Glo II series is a complete surface-mounted lighting line designed around a modular system of triangles, circles and squares. The units will fit either 3- or 4-in. outlet boxes and are available in polished chrome, copper, brass or oyster white finishes. Produced in two wattages (100 and 150) and three diffuser types. Marvin Electric Mfg. Co., 648 So. Santa Fe Ave., Los Angeles 21.



Walnut-Patterned Laminate

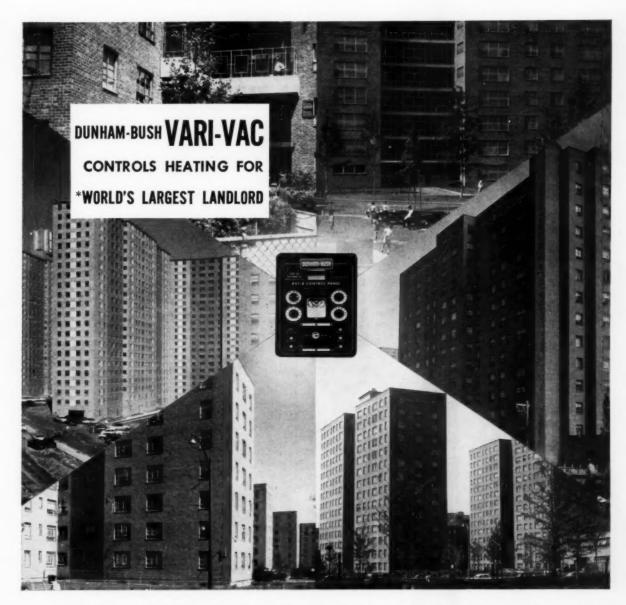
A figured half round walnut pattern, reproduced from an outstanding panel selected by a leading furniture designer, is the first in a new series of woodgrain reproductions. The Superwood line will include other distinguished wood grains, carefully selected and reproduced in a laminate suitable for many kinds of furniture. Parkwood Laminates, Inc., Wakefield, Mass.



Porcelain Enamel Toilet Stalls

The Vitre-Steel line of toilet compartments features both ceiling hung and floor braced styles in porcelain enamel over steel. The porcelain enamel is said not only to withstand every day usage, but to be resistant to acids, cleaning compounds and even defacement. Henry Weis Manufacturing Co., Inc., Elkhart, Indiana.

(More Products on page 328)



VARI-VAC is selected for BIG heating jobs (and small ones too) to provide fuel economy . . . precise central control, even in higher ambients . . . simplicity of operation . . . minimum maintenance cost . ultimate in tenant comfort.

For 10 years VARI-VAC has been proved-in-use by the New York City Housing Authority . . . is installed in its earliest, in its most recent projects.

On your jobs, big and small, specify VARI-VAC, the differential vacuum heating system that automatically balances heat medium to balance with varying heat loss of building due to changing outside weather conditions.

*New York City Housing Authority, "Landlord for 312,000 persons-

VARI-VAC, nerve center for controlling heat, has been selected by the New York City Housing Authority to regulate heat for 927 buildings in 64 of its projects. These projects contain 74,761 apartments housing 283,972 tenants.



Air Conditioning, Refrigeration, Heating Products and Accessories DUNHAM-BUSH, Inc. West Hartford 10, Conn., U.S.A.

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Rush me Vari-Vac details (Bulletin 2101)

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Here's window beauty in wood

The natural wood window beauty of Andersen WINDOWALLS blends harmoniously with fine wood paneling like this...helps the designer create a room of distinction. And these attractive, convenient Andersen Casement Windows are easy to open, easy to close, yet exceptionally weathertight because of careful design and precision manufacture by the skilled window craftsmen at Andersen. Made

of selected, toxic-treated *wood*, they provide *natural* beauty, *natural* insulation against both summer's heat and winter's cold.

For full specification data on WINDOWALLS, see Sweet's Files or write Andersen for Detail Catalog and Tracing Detail Files. WINDOWALLS are sold exclusively by millwork dealers throughout the country, including the Pacific Coast.



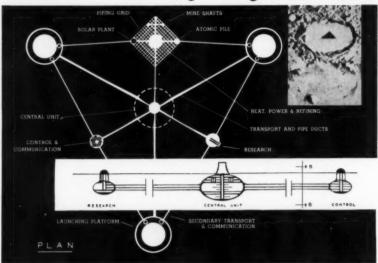
Andersen Casement Windows in a Michigan residence; Paul Moffett, A.I.A., is the architect.

to complement fine paneling

Andersen Windowalls

ANDERSEN CORPORATION . BAYPORT, MINNESOTA

MARS outstanding design SERIE



lunar base

Tomorrow's realities depend on research and imagination today. Both were used extensively in the planning of this lunar base designed by William G. Harvey, Jr. to accommodate space ships and travelers. The suggested location is "Aristotle," one of the craters near the north pole of the moon. Most of the base is beneath ground level to minimize temperature changes. Living quarters are spacious and recreational facilities include a swimming pool and basketball court. Power is supplied by solar plants during the day and atomic pile at night. Research, living and working areas are joined by monorail subway.

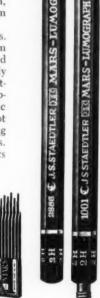
No one can be sure which of today's new ideas will become reality tomorrow. But it will be important then, as it is now, to use the best of tools when pencil and paper translate a dream into a project. And then, as now, there will be no finer tool than Mars-from sketch to working drawing.

Mars has long been the standard of professionals. To the famous line of Mars-Technico push-button holders and leads, Mars-Lumograph pencils, and Tradition-Aquarell painting pencils, have recently been added these new products: the Mars Pocket-Technico for field use; the efficient Mars lead sharp-ener and "Draftsman's" Pencil Sharpener with the adjustable point-length feature; and - last but not least-the Mars-Lumochrom, the new colored drafting pencil which offers revolutionary drafting advantages. The fact that it blueprints perfectly is just one of its many important features.

> The 2886 Mars-Lumograph drawing pencil, 19 degrees, EXEXB to 9H. The 1001 Mars-Technico push-button lead holder. 1904 Mars-Lumograph imported leads, 18 degrees, EXB to 9H. Mars-Lumochrom colored drafting pencil, 24 colors.



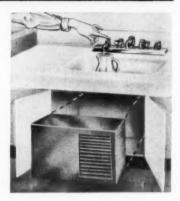




J.S.STAEDTLER DE MARS-LUMOGRAPH DEG

at all good engineering and drawing material suppliers

PRODUCT REPORTS



Ice Water on Tap

A tiny undersink unit that both chills and purifies keeps ice water on tap in the home, with fingertip control afforded by a push button faucet in the sink. The unit consists of a stainless steel storage cooling tank and a hermetic type refrigerating machine that requires no maintenance and is furnished with automatic controls. Housed in a container of heavy-gauge steel or stainless steel, 23 in. wide, 18 in. high and 61/2 in. deep, it is equipped with a removable louvered front panel. Drain and water connections are the only installation requirements, and the unit plugs into any 110 volt electrical outlet. Filtrine Mfg. Co., 87 W. Prospect St., Waldwick, N. J.



Deck Type Drinking Fountain

The Series 600 drinking fountain is styled in acid-resistant white porcelain on cast iron, and can be equipped with any combination of the many bubblers, glass-fillers, and faucets offered as accessory fittings. Standard equipment includes a stainless steel rim for watertight installation, raised bubbler platforms, and sloped ledges to prevent water from running back over the cabinet top. The 30- by 20-in. deck type unit comes with two fixture openings, and a chrome cap covers the second opening if only one fixture is required. All fixtures are chrome-finished brass. Sunroc Corp., Glen Riddle, Pa.

(More Products on page 332)

for these free books

from H. H. Robertson Company's technical library



New Composite Q-Floor -Q-Deck Cataloa:

Catalog contains technical data on all phases of cellular steel floor and roof deck construction. Structural details and specifications are more complete than ever before.



Design and **Cost Factors**

This book compares Q-Floor with other types. Based upon a typical multi-story

building, the study is replete with charts and cost analyses of all structural components.



Color Galbestos:

Complete details and specifications on this maintenance-free roofing and siding now available in colors. Catalog shows the four new colors in addition to the standard black and maroon.



How to Fireproof Q-Floor and Structural Steel

This is a description of fireproofing methods when Q-Floor is used with structural steel

framing. It contains detailed drawings, typical code requirements and fire resistive ratings.



Ventilation **Engineering Booklet:**

More than a ventilator catalog, this booklet contains tables of exhaust capacities, based upon average wind velocities, temperature differences and height above intake. Use the coupon below.



An Analysis of **Industrial Roof** Construction

All the better-known roof types (flat, monitor, bow-string, double-pitch, high-low

bay, saw tooth) are compared on the basis of weight of structural steel, volume, roofing, sash area, flashing, ventilation and daylighting.

Robertson Products

for modern buildings

H. H. Robertson Company

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NAME

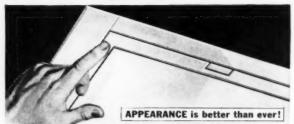
Look what happens when **BENJAMIN**



Look what happens when you specify **BENJAMIN** Troffer Lighting

Things really start to happen when you specify money-saving, new Benjamin Troffers. Lighting maintenance expense is cut. Low-ceilinged rooms get a new improved light treatment. Annoying glare is banished. There's a brand new freedom of architectural expression and lighting layout. Shown here are a few of the advanced Benjamin features that help to make all this happen at the lowest possible cost per year. Investigate Benjamin Troffer Lighting for schools, stores, offices and factories... all things considered they're the Better Lighting Choice.

BENJAMIN ELECTRIC MFG. CO., DES PLAINES, ILLINOIS
Sold Exclusively Through Electrical Distributors.



Greater ceiling beauty can happen to any room with the slim, trim design of Benjamin Troffers. A seamless frame, which shows no visible marks where the cover is joined, and concealed latches and hinges, make possible smooth, uninterrupted lines.

RELAMPING is easier than ever! Here's the newest that's happened to speed up relamping and all-around servicing. It's the Benjamin DeLuxe Concealed Latch, standard on glass-enclosed troffers. Just a fingertip touch opens the cover...closes by simply snapping shut. Requires no tools... never needs servicing. TROFFER SELECTION is greater than ever!

There's no need to compromise size, style or type of installation when you specify Benjamin Troffers! Any architectural effect you desire can be made to happen with this wide choice: 12" and 24" widths; 4' and 8' lengths; 2' x 2' for fill-ins; wide range of glass and plastic covers or louvers; six different mounting styles.



LIGHTING goes to School!



Lots of things happen when you specify Benjamin for school lighting. There's a new freedom of choice which leads to best possible new lighting and relighting results. You get a wide range of opportunity—such as Troffers, Varsity, Officer or Corri-lite—to meet school budget requirements. And, when installed, Benjamin school lighting units provide reduced maintenance and operation costs through construction advantages like those shown here. Considering all these things, Benjamin School Lighting is your Better Lighting Choice!



VARSITY fluorescent units represent a sure way to keep initial cost down without sacrificing lighting quality. Look what happens: Visual comfort is increased through translucent plastic side panels combined with 40% upward light. Cleaning is a chore no more because of hinged louvers designed for minimum collection of dirt.

OFFICER units feature the slimmest, trimmest appearance that ever happened to a classroom! In addition, however, they feature extra rigid construction provided by one-piece moulded louvers, and rugged, extruded plastic side panels.

CORRI-LITE solves hall-lighting problems with fewer fixtures! Unique baffle-design provides smart appearance plus correct shielding at a truly economical



BENJAMIN

RIGIDITY teams up

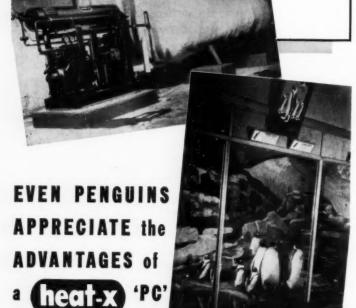
with trim appearance!

SCHOOL LIGHTING UNITS

CASE HISTORY

Another Space-Saving Application of Heat-X 'PC' Package Chillers.

National Zoological Park Washington, D.C.



Only with a Heat-X 'PC' Package Chiller could the desired capacity be obtained while allowing sufficient space for the required 400 gal. storage tank.

Here, chilled water maintains the penguin pool at 35° F... is also used to hose down cage floor and maintain cage temperatures at approximately 40° F.

Patented Inner-Fin® design of 'PC' Package Chillers makes possible this maximum capacity with minimum bulk. All-copper construction of water passages eliminates any corrosion problem... assures continued satisfactory operation.

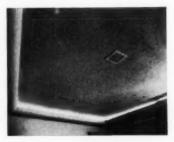
Write for complete information on Heat-X 'PC' Package Chillers in 2 HP through 100 HP models.

HEAT-X, Inc.

PRODUCT REPORTS

Remote Air Conditioner

The new Airtherm remote air conditioner provides unit room control of temperature, humidity and ventilation without ductwork by using the same piping system for heating and cooling. In old buildings that use wet heat systems, the new air conditioner can often use existing pipes and central system by adding insulation and a chiller. The units are available in four series with capacities from $\frac{1}{2}$ ton to 2 ton nominal cooling and 160 to 600 cfm., for cabinet or concealed type installation, floor or ceiling. Airtherm Mfg. Co., 700 S. Spring Ave., St. Louis 10, Mo.



Patterned Acoustical Plaster

A line of lightweight aluminum molds for impressing designs in acoustical plaster are available in stock patterns, or custom-made to the architect's design as in the illustration above. Geometric or random patterns are impressed with the molds after the plaster is partially dry. Howard Rose Industries, 1628 N. Columbia Blvd., Portland 17, Oregon.



Dual-Purpose Lighting Unit

Accent lighting from two 150 watt floodlamps or spot lights mounted at each end of the unit is augmented by high level illumination from the three 100 watt incandescent lamps in the center panel of this recessed fixture. Two circuit wiring may be used to increase adaptability in many installations. Face size of the unit is $41\frac{1}{2}$ by 10 in., while the insert size is 40 by 81/2 in. and the insert depth is 7 in. It is made with an alumac finish and specular aluminum reflector, and features a spring hinge drop face for quick, easy installation and relamping. The Novelty Lighting Corp., 2480 East 22nd St., Cleveland 15, Ohio.

(More Products on page 336)

PACKAGE CHILLER

New Speed Record in Baltimore for Erection of Structural Steel

Steelwork erected at the rate of 300 tons per week—that's the record set for Baltimore recently during the construction of the Commercial Credit Building, attractive new home office for Commercial Credit Corporation. The 4,850-ton framework for the 20-story structure was erected in just over sixteen weeks, using Bethlehem High-Strength Bolts as connectors for the structural members.

Bethlehem High-Strength Bolts save time in erecting steelwork because they can be installed quickly by two men, one using a holding wrench, the other a calibrated impact wrench. Each bolt is used with two hardened washers, one placed under the head, the other under the nut. The joints thus obtained are tight and sound.

High-strength bolting also has other advantages. It is relatively free from noise, making it a desirable form of construction for hospital and school areas. What's more, there are no fire hazards to contend with, as the bolts are installed cold.

Bethlehem High-Strength Bolts are made of carbon steel in popular sizes, and are quenched and tempered to meet the requirements of ASTM Specification A-325. Their use is explained fully in our 24-page booklet on high-strength bolting. If you would like to have a copy for reference, just drop a line to the nearest Bethlehem sales office.

COLOR MOVIE ON BOLT-MAKING

The entire story of the manufacture of fasteners is told in our interesting color film, "Holding Power." 16 mm, with sound. Showing time, 25 minutes. If you would like to have a print for showing, please write to us at Bethlehem, Pa.



Using Bethlehem High-Strength Bolts, Bethlehem ironworkers erected 4,850 tons of steelwork for Commercial Credit Building in just over sixteen weeks, setting new speed record for steel erection in Baltimore. Architects: Harrison & Abramovitz, New York; Structural Engineer: Edwards & Hjorth, New York; General Contractor: Consolidated Engineering Co., Inc., Baltimore.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast
Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL





Fenestra Industrial Steel Windows that need no painting, ready to be installed replacing the old monitor sash on Caterpillar Tractor Co., Building HH, Peoria, Illinois



Shown here are A. F. Wiedeman, Caterpillar Construction Engineer, and C. Y. Chapman, Construction Superintendent, examining the Fenestra Bend Bar Test that demonstrates the stronger bond of the Fenestra finish. Mr. Chapman, holding the Fenestra test bar, calls it "one of the best jobs I've ever seen." Your Fenestra representative can show you this same test. Ask to see it today.

The Fenestra FENLITE Finish is also available on the complete line of Fenestra Intermediate Windows for schools, office buildings and other fine structures.



Caterpillar Tractor Co.,
Peoria, Illinois, chooses Fenestra
Industrial Steel Windows
because they estimate they will

SAVE WINDOW PAINTING COSTS FOR 20 YEARS!

Maintaining nearly five miles of monitor windows on the roof of Caterpillar Building HH and the foundry at Peoria, Illinois, was an expensive and time-consuming problem. With the ordinary sash originally installed in these buildings, a complete paint job was required every four years. Even with this kind of care, the fixed sash in these monitors needed extensive reglazing and rehabilitation a few years ago.

Under the direction of W. H. Zurhorst, Manager, Plant Engineering, a plan was developed by C. Y. Chapman, Construction Superintendent, and A. F. Wiedeman, Construction Engineer, to completely replace the sash with Fenestra* Industrial Steel Windows that needed no painting. Based on careful tests they estimate that these windows will require no

maintenance painting for at least 20 years. This saving in labor and materials will pay for the replacement!

New Fenestra FENLITE Finish

Fenestra Industrial Steel Windows with the New FENLITE Finish give longer life without painting plus a distinctive, new, window beauty. The FENLITE process is an exclusive Fenestra development based on years of experience and research with corrosion-resistant finishes for steel windows.

If you are planning a new plant, or if you are trying to solve an expensive maintenance problem with your present windows, get the facts about New Fenestra FENLITE Industrial Steel Windows. Call your local Fenestra representative—listed in the Yellow Pages—or mail the coupon below.



FENLITE INDUSTRIAL STEEL WINDOWS

INCORPORATED

Your Single Source of Supply for DOORS • WINDOWS • BUILDING PANELS

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Dept. AR-3, 2252 East Grand Boulevard Detroit 11, Michigan

Please send me complete information on Fenestra FENLITE Industrial Steel Windows.

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duty, open steel floor grating of greater strength and economy, The GLOBE Company presents GOLD NUGGET Welded Grating the first grating to take advantage of modern engineering design. As a result of this improved design, the GOLD NUGGET primary load bar provides 22% more strength with 14% less weight. The primary load bar is a miniature I-beam with all of the advantages of a true structural member.

GOLD NUGGET Welded Grating is recommended for power houses, loading docks, oil refineries, fire escapes, drain grates, plating rooms, filtration rooms and for all types of heavy duty platforms.

GOLD NUGGET

- * 36" projection weld nugget for greater rigidity and strength
- ★ vertical alignment of the main load bars assured
- * all bars are load carrying bars including secondary bars
- * anti-skid pattern

PROJECTION WELD

Each secondary load bar (A), as projected welded to the primary load bar (B) has a shear strength of 5,000 pounds per weld. There are 28 such projection welds to a square foot of grating. This means that GOLD NUGGET Welded Grating can sustain greater shock loads than other gratings.

For the complete details of this revolutionary new grating, write for new catalog today. Distributors in all principal cities. Consult the yellow pages in your phone book under "GRATING."



10,000

E Company

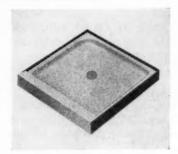
SAFETY GRIP-STRUT GRATING . GOLD NUGGET WELDED GRATING . CABLE-STRUT AND GLOBETRAY CABLE RACEWAYS 4020 SOUTH PRINCETON AVENUE . CHICAGO 9, ILLINOIS

PRODUCT REPORTS



Compact Toilet and Washroom

Travel-Lav is a packaged bathroom designed for installation where there is not enough space for conventional plumbing fixtures. An actual floor space of 85/8 in. by 20 in. is required for one unit which includes a foldaway toilet, stationary wash basin complete with hot and cold water, combination faucet and all parts necessary for operation. A similar model provides a shower, toilet and lavatory in a space 311/2 by 39 in. The units come equipped with faucets, traps and vacuum breaker, and all piping and parts are assembled and ready for connection to drain and water lines. Access panels are provided to reach connections and servicing. Angelo Colonna, Inc., Boudinot and Westmoreland Sts., Philadelphia 34, Pa.



Terrazzo Shower Receptor

The new Biltmore receptor is said to eliminate the most costly construction operation in shower installation - forming the threshold - by incorporating a built-in terrazzo sill or entrance. A complete one-piece leak-proof solid structure, it makes a lead or copper pan unnecessary and is not affected by average building settlement. A square model 32 by 32 or 36 by 36 inches, and a corner model 36 by 36 inches are available from the Plumbing Products Division. Cutler Metal Products Co., Camden, N. J.



42 acres of comfortable heating ...for 16 years!

Provided by 35 Sarcotherm Weather-Compensated Control Systems

Here's the Test...35 Sarcotherm Systems...16 years on the job...serving 322 dwelling units at Hanover Acres Housing Project, Allentown, Pa. That's a tough test of heating control dependability and economy!

And here's the Result!...The Housing Authority of the City of Allentown reports...throughout the entire 16 years these Sarcotherm Weather-Compensated Control Systems for hot water heating have given trouble-free service and provided money-saving, comfortable heating.

Dependability - plus...that's one of the major reasons Sarcotherm Systems have been installed in many important projects including Hanover Acres and Beardsley Terrace Housing, Bridgeport, Connecticut. For undivided responsibility on your installations, specify and order from one "Complete Line" source...SARCO-SARCOTHERM.

Write for catalogs. Sarcotherm Controls, Inc., Empire State Building, New York 1, N. Y.

ADVANTAGES OF SARCOTHERM SYSTEMS

On-the-job help—Sarcotherm engineers cooperate in preparing working drawings and wiring diagrams for each job. Also assist in supervising the installation.

Easy to maintain - simple, trouble-free design, fewer parts.

Easy to adjust - to any desired setting.

Complete Control Systems from Sarcotherm include all accessories such as control panels, thermostats, radiator valves, balancing fittings, steam traps, domestic hot water controls, etc.

4008-B

Sarcotherm

AN AFFILIATE OF SARCO CO., INC.

Weather-Compensated control systems for steam, hot water and radiant heating



That depends on the houses. The size, the type of architecture, the construction, and the climate can make big differences.

For example, take the air conditioners shown on the opposite page.

One may be best for your houses, but which? Only a survey of your plans will tell. So ask your Carrier dealer to guide you in the right selection. Because he sells these four (and many more), his first interest is to recommend the type that serves you best. Call him today and be sure.

It's time to call Carrier. You'll find your Carrier dealer's name in the Classified Directory. Carrier Corporation, Syracuse, New York; Toronto, Canada; International Division, New York, N.Y.



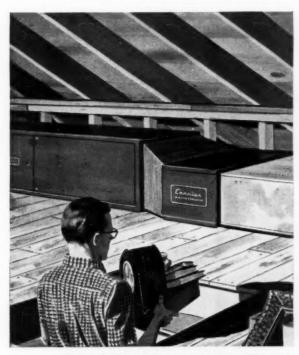


Do your homes have basements? This Carrier Year-round Weathermaker* provides heating and cooling from one compact unit. It also fits in closets or utility rooms. Uses gas or oil and can be water or air cooled. One control for heating and cooling.





Are your homes without basements? This combination of a Carrier downflow type Winter Weathermaker with a Summer Weathermaker underneath is perfect if you put your ducts in the slab or crawl space. Takes very little space in the house. Gas or oil fired.





Do you build small, compact houses? This horizontal Winter Weathermaker has a Summer Weathermaker alongside and supplies year-round air conditioning taking no space within the house. It fits in the attic or crawl space, needs no water.





Do you want to offer future air conditioning? This Carrier Winter Weathermaker has a cooling coil casing on top. A coil can be inserted in this casing for summer cooling without changes in the ducts. Your homes will have "the FURNACE with a FUTURE."

Forward Curve Centrifugal Fans

Supplement #1 to Bulletin C-103 is devoted largely to detailed performance charts on various types of forward curved centrifugal fans. 40 pp. Also available is a 20 page illustrated booklet which pictures axial airfoil fans with dimensional charts, performance tables, certified ratings and operational descriptions. E. R. Anderson, Chicago Blower Corp., 9863 Pacific Ave., Franklin

Corrosion-Resistant Equipment

Catalog C-14 describes a wide range of synthetic resin formulations, glass reinforced polyester, polyvinyl chloride, and Teflon equipment. Detailed coverage of equipment such as pipes and fittings; valves; fume ducts and fume systems: tanks, towers and accessory supplies; heat exchangers; pressure and vacuum equipment; and agitators is supplemented by data on chemical-resistant cements, and the field construction of plastic equipment. Haveg Industries, Inc., 900 Greenbank Rd., Wilmington 8,

Pyrodor Package Units (AIA 16-A)

Catalog DHS-2457 features Pyrodor package units of flush metal doors, frames and hardware. Typical wall conditions encountered and frames suited to many construction problems are pictured, and a complete section on hardware and accessories is included. 24 pp. Dusing & Hunt, Inc., Dept. D, Lake St., Leroy,

Complete Chalkboard System

(AIA 35-B-11) New 16-page catalog covers Loxit line of chalkboards, tackboards and trim, along with such accessories as chalk troughs, sliding boards, trophy cases and bulletin boards. Also available are comprehensive catalogs on the Loxit Floor Laying System, AIA 19-E-9, and Victory Acoustical Suspension Systems, AIA 39. Loxit Systems, Inc., 1217 W. Washington Blvd., Chicago, Ill.*

Technical Report No. 1

Summarizes tests made to determine how the bonding of a waterstop to concrete is affected by its cross section. A complete test report is supplemented by photographs of procedures and results. W. R. Meadows, Inc., 7 Kimball St., Elgin, Ill.*

Lighting Fixture Catalog

Catalog No. 55 covers complete line of fluorescent and incandescent fixtures for industrial and commercial applications. Slim latchless fluorescent troffers, and incandescent Displayolites in a full range of colors for accent lighting are featured. 400 pp. Ruby-Philite Corp., 32-02 Queens Blvd., Long Island City, N. Y.*

Plastics as Building Materials

A new 8-page circular provides an introduction to plastics and their uses and characteristics. Seven families of plastics commonly used for building products are described, with comparative heat resistance and strength data. 10¢. Circular D9.0, Small Homes Council, University of Illinois, Urbana, Ill.

Sliding Glass Doors (AIA 16-A)

Arcadia Metal Products Catalog for 1957 includes reference charts for all stock doors, with required glass dimensions, suggested rough opening sizes and shipping weights of the respective units. Photographs illustrate close-up details of engineering features of the head section, sill interlockers and jamb as well as the hardware designs. 16 pp. Arcadia Metal Products, Fullerton, Calif.*

* Other product information in Sweet's Architectural File, 1956.

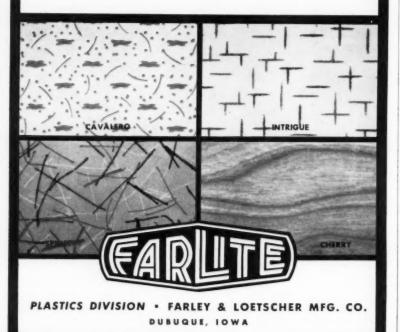
(More Literature on page 344)

the very best in high pressure PLASTIC LAMINATES



Select from fresh, eye-catching, Farlite patterns ... in "true-to-nature" wood tones or a colorful variety of modern designs. Enduring Farlite plastic laminates are available in over a hundred patterns and color combinations . . . in 1/16" thick sheets, or complete warp-resistant tops and panels 13/16" and 1-1/4" thick.

Insist on Farlite . . . it means you'll get the very best! See your regular supplier, or write . . .



CALIFORNIA REDWOOD

Design: Charles Warren Callister · Photography: Morley Baer



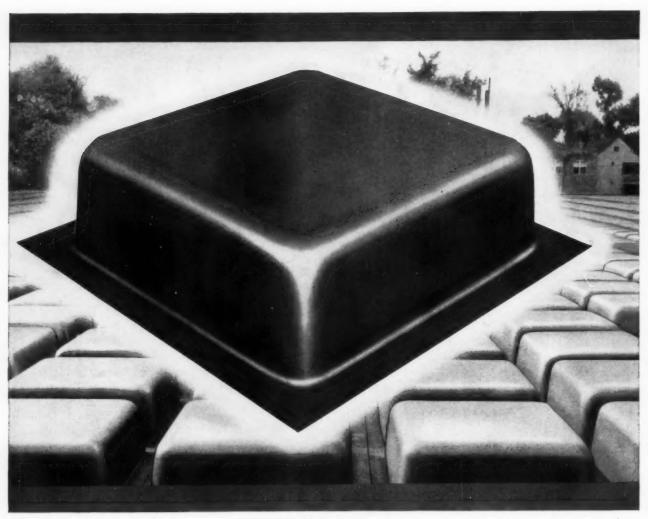
East meets...and becomes...West beautifully and durably

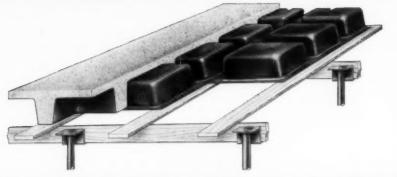
in natural California Redwood. Whether the job is expressive of Orient or Occident, let versatile redwood help give it substance.



California Redwood Association 576 Sacramento Street San Francisco 11

WIDE OPEN SPACES...





Showing how Steeldomes are used in forming waffle-type (two-way) concrete joist construction. Steeldomes are rigid, deep-drawn, one-piece units. Flanges forming standard-width joist soffits are an integral part of the Steeldomes. When erected Steeldomes are butted at all soffit joints, and eliminate the common defects of forms which must be lapped. Wide column spacings for open floor areas are easily achieved, because of (a) the basic economy of two-way construction, and (b) the saving of deadload through use of a joist framing system. Story heights are decreased by the elimination of deep beams. Standard Steeldomes have a void of 30" x 30" and an overall plan size of 36" x 36" including flanges. Standard depths are 8", 10", 12", and 14".

342

WITH ECONOMY...FOR TODAY'S CONSTRUCTION

...ALL MADE POSSIBLE WITH THE NEW CECO-MEYER ONE-PIECE STEELDOME METHOD OF FORMING WAFFLE-TYPE CONCRETE JOIST FLOOR SYSTEMS

Maximum use of floor space is a must in today's functional buildings. And the most practical way to design wide open floor areas . . . with no projecting beams . . . is by using waffle-type concrete joist construction formed with Ceco-Meyer one-piece Steeldomes. The new Ceco method is the most economical way of forming waffle-type concrete joist construction. In most cases you save up to 30% in materials . . . up to 40% in floor weight compared with the use of flat

plate. Besides saving money, labor and materials, Ceco Steeldomes form smooth concrete surfaces for exposed ceilings of high quality finish—pleasing waffle-pattern design at no extra cost. R/C duct underfloor electrification may be readily installed—and pipes, ducts and other mechanical equipment can be located without interference of projecting beams. In planning your next building project, call in your Ceco product specialists.

CECO STEEL PRODUCTS CORPORATION

Offices, warehouses and fabricating plants in principal cities General Offices: 5601 West 26th Street, Chicago 50, Illinois

IN CONSTRUCTION PRODUCTS CECO ENGINEERING MAKES THE BIG DIFFERENCE

Ceco-Meyer Steelforms / Concrete Reinforcing / Steel Joists / Metal Roof Deck / Windows, Screens and Doors / Metal Lath



"CREATIVE ENGINEERING" BY CECO—with a variety of building methods and products to meet any design problem. See CECO in the early planning stage for Steel or Concrete Joist Floor Systems—the most economical underfloor electrification—the widest line of Steel and Aluminum Windows and Curtainwalls. All will help you achieve individuality in building design. And at CECO construction materials and services can fit the tightest budget.

CECO STEEL PRODUCTS CORPORATION

5601 West 26th Street, Chicago 50, Illinois

Please send me your descriptive bulletin on Ceco Steeldomes, No. 4006.

Name

City____State___

AR

OFFICE LITERATURE

Plaster and Acoustical Systems

(AIA 21-A-5; 39-B) Contains a summary of fire tests on vermiculite systems, suggested specifications, and information on all uses of vermiculite in plastering and acoustical treatment, including base coat gypsum plastering, fireproofing, and insulating backup for spandrel walls. Special attention is given to machine methods of applying lightweight plaster. 8 pp. Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.*

Glass For Construction

Individual sections outline the uses, qualities and specifications of a wide variety of flat glass and Blue Ridge patterned glass products. 28 pp. Libbey-Owens-Ford Glass Co., 608 Madison Ave., Toledo 3, Ohio.*

Engineering Test Apparatus

1956 catalog contains descriptions and illustrations of complete line of apparatus for engineering tests of soils, concrete, asphalt and other construction materials. Soiltest, Inc., 4711 W. North Ave., Chicago 39, Ill.



"Stop Rust" is a comprehensive 32-page full color manual containing information and recommendations on protective coatings. Application photographs and color chips illustrate finishes for many purposes. Form No. 256. Rust-Oleum Corp., 2799 Oakton St., Evanston, Ill.

Guide for Ultimate Strength Design

. . . of Reinforced Concrete supplements the ACI Building Code which permits the use of the ultimate strength method for the design of reinforced concrete members. The method is presented in its simplest form with working equations and charts. 36 pp., 75¢. American Concrete Institute, P. O. Box 4754, Redford Station, Detroit 19, Mich.

Steel Equipment Reference Manual

Manual #485 analyzes all types of steel shelving, drawers, lockers, work benches and tables, and other storage, office, store, warehouse and shop equipment. Equipto, Aurora, Ill.

Terrazzo Floors (AIA 23-E)

Two brief publications give information on the maintenance of terrazzo floors; and on the design, construction, operation and maintenance of conductive acetylene carbon terrazzo operating room floors. The National Terrazzo and Mosaic Assoc., Sheraton Building, 711 14th St., N. W., Washington 5, D. C.*

Specifications for Residences

(AIA 19-A-1) Bulletin No. 10 includes recommended grades for items of lumber used in home-building, illustrations of patterns in siding and paneling, and suggested specifications. 8 pp. Southern Pine Association, P. O. Box 1170, New Orleans 4, La.

Porcelain Building Products

Full-color 8-page catalog describes and illustrates Seaporcel porcelain panels for building exteriors and interiors, and Seaporclad curtain wall insulated, laminated and assembled panels. Seaporcel Metals, Inc., 28-20 Borden Ave., Long Island City, N. Y.*

Induced Draft Bifurcator Fan

Bulletin DB-44-56 outlines performance data and specifications for complete line of induced draft Bifurcators. Also given are tables and charts on volume of flue gas for oil, gas, and coal, and manufacturers' organizations boiler code ratings. 20 pp. DeBothezat Fans Div., American Machine and Metals, Inc., East Moline, Ill.

(More Literature on page 348)





Effective Lighting + Sound Conditioning + Striking Beauty with Modern Ceiling Treatment

Here is an outstanding example of a "combination" ceiling treatment. It makes this three-way contribution to an interior: 1. Highly-efficient sound conditioning to arrest noise. 2. Soft, diffused lighting. 3. An attractive contribution to the modern decor. Acousti-Celotex Sound Conditioning Tile and Acousti-Lux Translucent Panels provide a com-

patible blending of light- and sound-conditioning in an integrated ceiling of unusual beauty. From planning and designing stage right through to the job's finish, Acousti-Celotex Distributors will cooperate with you . . . to achieve the utmost in practical and beautiful ceiling integration.

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ACOUSTI- CELOTEX Sound Condition is

ucts to Meet Every Sound Conditioning Problem . . . Every Building Cade The Celatex Corporation, 120 5. La Salle St., Chicago 3, Illinois In Canada: Dominion Sound Equipment, Ltd., Montreal, Quebec

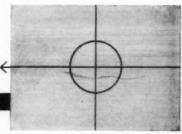
FOR COMPLETE DETAILS on Acousti-Celotex Sound Conditioning Tile and Acousti-Lux Translucent Panels, write to The Celotex Corporation, Dept. B-37, 120 S. La Salle St., Chicago 3, Illinois.

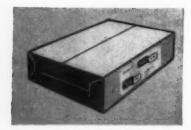
FESCO impregnated roof





— Precision trimmed, carton-protected Fesco Board give four-square corners and hairline joints, prevents depressions under felts and eliminates insulation "heat leaks."





CARTONED — Convenient, 60 board foot cartons provide for ease of handling and storage, job-site protection.

Heat Transmission (U) Values

- 1. U values are expressed in BTU/SQ. Ft./Hr./Degrees F temperature differential, still air inside and 15 MPH wind velocity outside.
- 2. Coefficients and procedures used for determining U values are in accordance with current edition of A.S.H.V.E. Guide.
- 3. For suspended plaster ceiling section, air space between ceiling and deck assumed to be from 34" to 4".

| Construction: Roof Deck Type | | nde | out C side xpos | of R | | | Gyp | Aetal sum F ter Co | erlit | |
|---|--------|--------|-----------------------|-------|-------|------|-------|--------------------------|-------|-------|
| and Thickness | Insula | ated : | with Fo | sco E | Board | Insu | lated | with F | esco | Board |
| Fesco Thickness | 21/2" | 2" | 11/2" | 1" | 3/4" | 3/4" | 1" | 11/2" | 2" | 21/2" |
| 4" Concrete | | | | | | | | .14 | | |
| 6" Concrete | .11 | .13 | .16 | .22 | .26 | .19 | .16 | .13 | .11 | .10 |
| 1" Wood | .10 | .12 | .15 | .19 | .22 | .16 | .15 | .12 | .10 | .09 |
| 2" Wood | .09 | .11 | .12 | .15 | .17 | .14 | .12 | .11 | .09 | .08 |
| 3" Wood | .08 | .09 | .11 | .13 | .14 | .12 | .11 | .09 | .08 | .07 |
| 21/2" Gypsum Fiber Concrete over 1/2" Gypsum Board | .10 | .11 | .13 | .16 | .19 | .15 | .13 | .11 | .10 | .08 |
| 21/2" Gypsum Fiber Concrete over 1" Rigid Ins, Board | .08 | .09 | .10 | .12 | .13 | .11 | .10 | .09 | .08 | .07 |
| 2" Perlite Concrete (1:6) on Steel form | .08 | .10 | .11 | .13 | .15 | .12 | .11 | .10 | .08 | .07 |
| 6" Hollow Core Precast Slab | .11 | .13 | .16 | .20 | .24 | .18 | .16 | .13 | .11 | .09 |
| Steel | .12 | .14 | .18 | .24 | .29 | .21 | .18 | .14 | .12 | .10 |

deck insulation BOARD

compare it with any board, on any count

COMPARE FIRE HAZARDS - Rated Incombustible; Flame spread, only 20.5; smoke contribution, 0. Fesco Board's basic ingredient is Coralux perlite. Expanded and annealed at 1700°F it is incapable of burning.

COMPARE PERMANENCE - No rot, no fungus, no decay. Our basic expanded Coralux perlite ingredient is dielectric and chemically inert. It will not support organic life of any type.

COMPARE MOISTURE RESISTANCE -Only 1.5% absorption by volume @ 24 hours total immersion. Not only is the basic ingredient of Fesco impervious to moisture but the board is completely impregnated with a water repellant binder. Fesco has no capillary or wick-like attraction as do fibrous materials.

COMPARE WEIGHT - Only 9 oz. per board foot. Because expanded Coralux perlite is feather-light. Fesco Board is only half the weight of most boards.

COMPARE DIMENSIONAL STABILITY -Linear change at 100% RH at 10 days + 1/5 of 1%. Due to its low moisture absorption, and mineral composition, Fesco Board will not grow, shrink, curl.

COMPARE DURABILITY - Compression resistance is 174.8 PSI. Fesco Board is not damaged by normal installation and maintenance traffic.

COMPARE LAYING TIME - Convenient 24" x 36" size. Smaller, lighter, dimensionally stable sheets lay truer, faster.

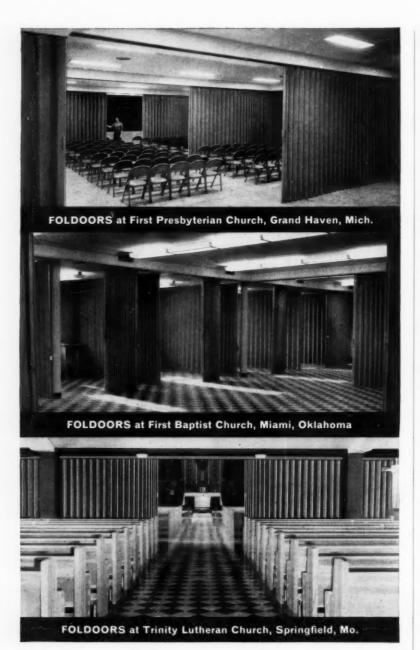
COMPARE COST - No other board, at any price, can match Fesco Board's balanced combination of every job-required property.

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Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Micra Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Comont.

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OFFICE LITERATURE

Multicolored Textured Finishes

Bulletin 115 describes Tweed one-coat multicolored textured finishes available in 25 standard color combinations for interior walls and fixtures. Sample swatches attached. Raffi and Swanson, Inc., 99 Eames St., Wilmington, Mass.

Vizupoles Flexible Displays

Catalog No. 365 illustrates applications of *Vizupole* uprights and accessories to a large variety of merchandising displays. Includes detailed information on complete line of framing members, base legs, brackets, shelving, hangrail equipment and display accessories. 25 pp. *L. A. Darling Co., Bronson, Mich.*

Tile-Tex Floor Covering (AIA 23-G)

Color brochure describes and illustrates *Tile-Tex* asphalt tile, vinyl-asbestos tile, and greaseproof tile in a wide range of patterns and colors. Suggested specifications are included. 16 pp. *Tile-Tex Division*, *The Flintkote Co.*, *Chicago Heights*, *Ill.**

Perfeclite Catalog

Presents Perfectite line of luminaires, with photographs, detail drawings, complete engineering information, and specifications. 60 pp. Also included is a 12-page brochure describing a full line of exit markers. Perfectite Co., 1457 E. 40th St., Cleveland 3, Ohio.

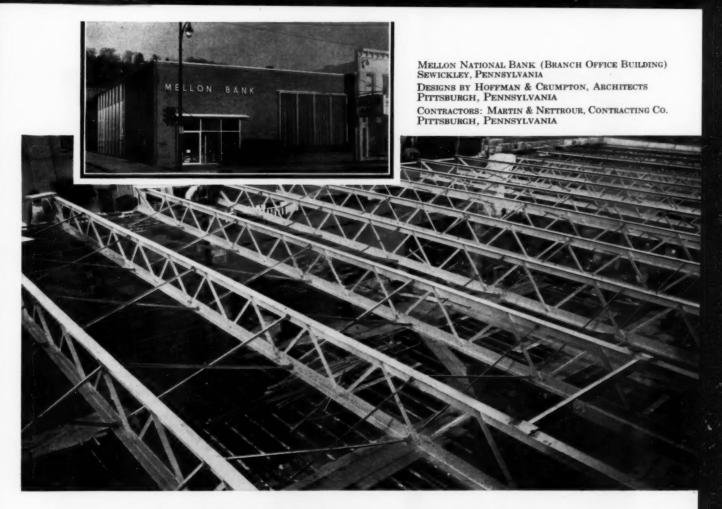
1957 Condensed Reference File

Defines distinguishing characteristics, appropriate fabricating techniques, and major fields of application for each of 6 different groups of *Bakelite* plastics, including polyethylenes, vinyls, phenolics, styrenes, epoxies and polyesters. Charts list the plastics by major methods of fabrication, such as bonding, laminating, molding, extrusion, calendaring, film and sheeting, surface coatings and flexible packaging materials. *Bakelite Co.*, 30 East 42nd St., New York 17, N. Y.

Partial List of Government

. . . of Interest to Architects, Builders, Engineers and Retail Lumbermen lists more than 250 articles and publications on wood structures, mechanical properties of wood, glued construction, seasoning, wood finishing and wood preservation. List No. 1081. Director, U. S. Forest Products Laboratory, Madison 5, Wisc.

(More Literature on page 352)



Perfect for small jobs like this—

AMBRIDGE STEEL JOISTS



This one-story, 52' x 100' branch office building is strong and safe as a bank should be. For not only was it built around a heavy steel frame, but its floor and roof are supported by steel.

In addition to furnishing 16,700 pounds of structural steel for the frame, American Bridge also supplied 25,000 pounds of AmBridge long-span Steel Joists and 15,600 pounds of AmBridge standard Steel Joists for floor and roof construction.

USS AmBridge Steel Joists provide rigid, lightweight and economical construction suitable for any type of floor, roof and ceiling. The underslung and open-web design provides for maximum head room and allows passage of pipes, ducts and conduits in any direction.

In floor construction, the ease and simplicity of handling reduces installation time to a minimum and permits other trades to begin their work promptly. And, for roof construction, these modern, new-design joists cut the time required to put your structure under cover.

For detailed information about the time- and money-saving advantages of using USS AmBridge Steel Joists on your next job, get in touch with our nearest Contracting Office, or write direct to Pittsburgh for a free copy of our 36-page catalog. It is the only complete steel joists catalog with design information for spans up to 120 feet. Ask for your copy today, or see it in Sweet's Files.

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AMBRIDGE STEEL JOISTS



Burke, Kober & Nicolais select Bigelow carpet for famous Haggarty's of Pasadena

Burke, **Kober & Nicolais**, Architects of Los Angeles, enjoy a national reputation as planners and designers of many of America's most famous stores.

Among their successes are Saks 5th Ave. in San Francisco, Battelstein's River Oak Store in Houston, Rhode's in Seattle and Levy's of Shreveport.

One of the recent achievements of this firm has been the plan and design of Haggarty's, one of the leading women's specialty stores on the Pacific Coast, famed for its exclusive collection of couturier fashions.

Since carpeting is a prime consideration in planning an interior such as Haggarty's, the correct choice is of the utmost importance.

Explaining the selection of Bigelow carpet, Mr. Gene Burke, member of the firm, had these comments to make:

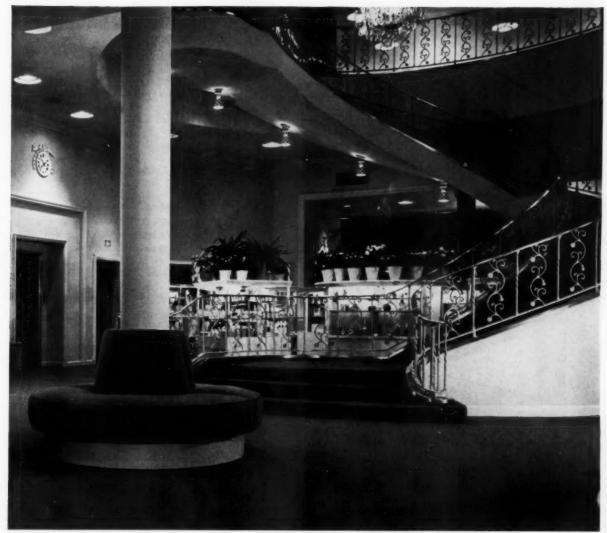
"Prime objectives of a store interior are to achieve attractive surroundings combined with furnishings and equipment that provide long and economical service.

"In Haggarty's the area around

Bigelow

fine rugs and carpets since 1825





The tailored simplicity of Bigelow Gropoint, plus its durability and soundabsorption characteristics, makes it ideal for a busy specialty store such as Haggarty's. In Haggarty's, as in many leading stores, all carpeting is by Bigelow.

the stairway and the stair itself, as illustrated here, were among the most interesting features of our use of Bigelow Carpet.

"We find that Bigelow Carpets are tough underfoot and help create customer comfort in a quiet, pleasant atmosphere. We are well pleased with their performance and our clients are pleased, too." If you are planning an installation, consult Bigelow carpet specialists for the right color, pattern and weave ... at a price your client can afford. No charge for this service, no obligation either.

Contact Bigelow today through the nearest sales office or by writing to Bigelow Contract Dept., 140 Madison Avenue, New York 16, N. Y.

Bigelow sales offices are located in the following strategic cities: Atlanta, Ga.; Boston, Mass.; Buffalo, N. Y.: Chicago, Ill.; Cincinnati, Ohio; Cleveland, Ohio; Dallas, Tex.; Denver, Colo.; Detroit, Mich.; Hartford, Conn.; High Point, N. C.; Kansas City, Mo.; Los Angeles, Calif.; Minneapolis, Minn.; New York, N. Y.; Philadelphia, Penna.; Pittsburgh, Penna.; St. Louis, Mo.; San Francisco, Calif.; Seattle, Wash.



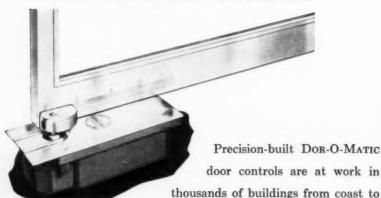
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coast . . . providing vital positive door control under even the heaviest traffic conditions. Designed for long service and complete adaptability to contemporary design and function, there are 31 models to choose from . . . one for every type door in any kind of building. Write for detailed information.

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CANADA: Dor-O-Matic of Canada, 550 Hopewell Avenue, Toronto 10, Ontario EXPORT: Consultants International, 69-77 Bedford Street, Stamford, Connecticut

OFFICE LITERATURE

Typical Lumber Designs (AIA 19-B)

Lists and illustrates nearly 300 designs of wood structures, ranging from basic types of trussed rafters and heavy wood roof trusses to highway structures, towers, and farm buildings. The designs employ the *Teco* connector system of engineered timber construction, and quantities and material lists accompany each. *Timber Engineering Co.*, 1319 18th St., N. W., Washington 6, D. C.*

Freezeless Wall Hydrants

(AIA 29-D-9) Forms 47, 48 and 118 provide information, details, and prices for freezeless wall hydrants and faucets. Woodford Mfg. Co., 1626 Delaware Ave., Des Moines 17, Iowa.

Air Blender System

Booklets B-5195 and B-5195-A describe through photographs and text the Westinghouse Air Blender system for heating and ventilating classrooms from a central supply source. Westinghouse Sturtevant Division, Dept. T-304, 200 Reachville St., Hyde Park, Boston 36, Mass.*

Pad Type Machinery Mounts

Bulletin K2D describes Universal dampers, vibration and noise absorbing machinery mounts utilizing Elasto-Rib. Data sheet gives complete information on the properties of Elasto-Rib, damper construction and installation diagrams, dimension and loading capacity tables, and a table showing how to select the correct size of damper. Korfund Co., Inc., 48-08A 32nd Pl., Long Island City, N. Y.*

A-B-C's of Spun Soil Pipe

Questions and answers together with line drawings describe the basic method of casting soil pipe by centrifugal force, and explain the advantages of pipe "spun" in this manner. 8 pp. Central Foundry Co., Foot of Pacific St., Newark 5, N. J.

Fuel Burning Systems

Bulletin No. 1231-A illustrates various elements of a packaged combustion assembly utilizing gas, oil, or combination gas-oil firing. Charts list components available in each of the various models of fuel burning equipment. Other listings are given for fuel firing arrangements and maximum firing rates. 6 pp. Orr & Sembower, Inc., Morgantown Rd., Reading, Pa.

(More Literature on page 356)

THEOREM:

Glulam Rigid Frames Produce Office Buildings with No Bearing Walls

GIVEN: Requirements for 2-story building for office and light manufacturing, with over 7,000 square feet of open floor area. Natural lighting highly desirable. TO FIND: Structural framing to meet these requirements while providing distinctive

appearance to harmonize with suburban setting.

PROOF! Here is a new concept of industrial construction which uses almost PROOF: Here is a new concept of industrial construction which uses almost unrestricted window area in place of restricting bearing walls, giving its occupants the unrestricted window area in place of restricting bearing walls, giving its occupants the unrestricted window area in place of restricting bearing walls, giving its occupants the unrestricted window area in place of restricting bearing walls, giving its occupants. unrestricted window area in place or restricting bearing walls, giving its occupa maximum of natural light and a refreshing view of its suburban surroundings. Size is 40'x 88', and structural framing consists of glulam rigid frames spaced at 16 feet; olulam heave are used to support the second floor. No posts or hearing partitions are Size is 40'x 88', and structural framing consists of glulam rigid frames spaced at 16 feet; glulam beams are used to support the second floor. No posts or bearing partitions are required, allowing unlimited flexibility of arrangement. Timbers remain exposed.

glulam beams are used to support the second floor. No posts or bearing partition required, allowing unlimited flexibility of arrangement. Timbers remain exposed, adding to the pleasant informal appearance. Total cost of the building including highest quality mechanical appointments is \$13.25 Total cost of the building including highest quality mechanical appointments is \$13.

a square foot. For information on the use of engineered timber construction, see our a square foot. For information on the use of engineered timber construction, see our linear for the booklet. "Buildings for Tomorous" in Square Catalog Files. Or write us for the booklet. "Buildings for Tomorous" a square foot. For information on the use of engineered timber construction, see our insert in Sweet's Catalog Files, or write us for the booklet, "Buildings for Tomorrow". adding to the pleasant, informal appearance.

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Local Representatives throughout the United States and Canada

of Thomas A. Shutz Company, Morton Grove, Illinois, with framing of glulam rigid frames spaced at 16'. Architect: Seymour S. Goldstein, Chicago; Stromberg. Construction Company of Chicago was general contractor.



Three reasons why

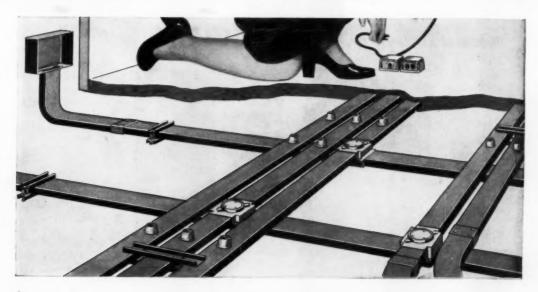
Miss Foster connects - wherever she goes

You can plan and build so that every square foot of floor space is available for electrical use. Outlets for typewriters, dictating machines, calculators, telephones, intercoms, lighting, postal machines and other electrically operated equipment can be arranged at will as the need arises. Any one of General Electric's three underfloor wiring systems provides for maximum use of floor space. This means substantial space economies in your own

office . . . and greater profit and flexibility when you rent to others.

Determine which of the three systems shown at the right is best suited to solve your power distribution problems now and in the future. For complete details, get in touch with your nearest General Electric Construction Materials district office or write Section C67-35, Construction Materials Division, General Electric Co., Bridgeport 2, Conn.

General Electric underfloor wiring-3 SYSTEMS



for two-level distribution—General Electric's New Steel System

This new all-steel system provides complete flexibility in layout and design because there are no limitations to the duct pattern in either the feeding or distribution portion of this two-level system. Use as many ducts as you like. Separation of

services allows unobstructed runs with no crossovers or crossunders. Wire pulling is easier and circuits are easy to trace. New steel duct (4-square inch cross-sectional area) provides for increased wiring capacity.

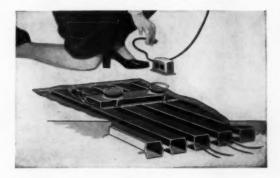
2. for single-level distribution— General Electric Fiberduct

Here's a widely accepted underfloor electrical raceway system that provides a good distribution of electrical outlets for many office operations. Yet the cost is low because Fiberduct is made of a strong, yet inexpensive, fibrous compound that can be sawed and fitted easily.



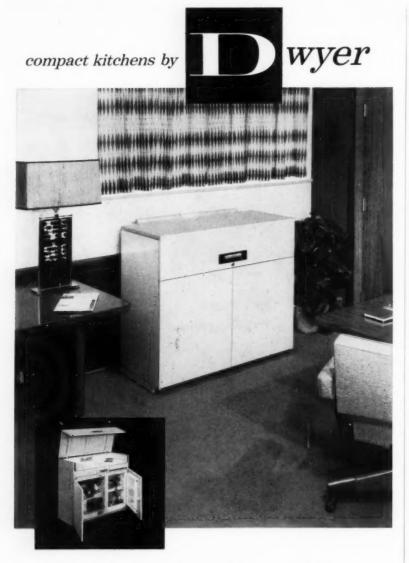
3. for cellular construction— General Electric Q-Floor Wiring

Q-Floor wiring is designed for installation in cellular steel subflooring. It makes it possible to convert every cell into a raceway . . . makes every square foot of floor available for present and future electrical use. No costly alterations, no litter, no tie-up of space or lengthy interruption of office routine, no matter how much or how often your electrical requirements change.



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OFFICE LITERATURE

Prestressed Concrete Products

(AIA 4-E-12) Describes the advantages of prestressed concrete structural products, and the method of making and installing the *Leap Double Tee*. Catalog also includes tables of loading for roof and floor members. 8 pp. *Leap Concrete*, *Inc.*, P. O. Box 1053, Dept. 2, Lakeland, Fla.*

Unit Deck

Gives outstanding characteristics, specifications, installation pictures, details, descriptions and diagrams of *Unit Deck. Unit Structures, Inc., Peshtiga, Wisc.**

Special Purpose Steels

Why and Where describes and illustrates typical uses of stainless steel, Aluminized steel, and Zincgrip-Paintgrip stainless steel. Also available is a folder showing uses of special-purpose sheet steels in curtain wall construction. Armco Steel Corp., Middletown, Ohio.*

Waste King Product Line

Spotlights key features of all appliance lines, including photographs and specifications covering dish-washers, home and commercial garbage disposers, built-in ovens and ranges, and incinerators. Waste King Corp., 3300 E. 50th St., Los Angeles 58, Calif.

Concrete Forming Equipment

Brochure describes Symons forming system for the light construction industry, including detailed information on the forms and hardware available. 8 pp. Symons Clamp and Mfg. Co., 4249 Diversey Ave., Chicago 39, Ill.*

Interlocked Armored Cable

(AIA 31-C-67) Contains photographs and specific descriptions of Nepco-Lok armored cables available for voltages up through 15,000 volts, single and multi-conductor. Correlated listings of most used dimensional data are arranged in table form, and separate sections cover the coordinated support system and fittings recommended for use with the cable. 24 pp. Adv. Dept., National Electric Products Corp., Galeway Center, Pittsburgh 22, Pa.*

Surfacing Material (AIA 35-C-12)

Color brochure T-CDL-404 illustrates GE Textolite, soon to be available in more than 80 patterns and colors. 6 pp. General Electric's Laminated Products Dept., Coshocton, Ohio.*



WEBSTER WALVECTOR® BETWEEN YOU AND WINTER

Yes, Webster Walvector...in the hands of your Warren Webster Man...is what you need for winter-long heating comfort, in commercial, industrial or institutional buildings...anywhere. Webster Walvector blankets every exposed wall with a barrier of clean, uniform, draft-free warmth that keeps winter out, keeps comfort in.

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VISION-VENT WINDOW WALLS

See how effectively Vision-Vent blends with masonry to create truly imposing buildings that are completely functional.

Vision-Vent is Truscon's exciting method of fast, economical wall construction. Vision-Vent goes up like other curtain-wall systems. Fast. Easy. With this important plus-it's a wall with window already in place.

The Vision-Vent system incorporates all massproduction and installation economies of standard steel windows. Each module is complete, sill to ceiling, including fixed lights, awning-type ventilator or Truscon Double-Hung Steel Window, and insulated panel.

For design distinction, insulated panels may be furnished in colored porcelain enamel, stainless steel or aluminum. Panels have an insulating value equal to that of an ordinary masonry spandrel wall. They retain interior heat; they provide for air-conditioning efficiency. Wall thickness of less than 11/2 inches provides extra square-feet of floor space. Light weight is reflected in structural savings.

Vision-Vent has had a tremendous success in all types of single- and multi-story applications. Truscon window engineers will be glad to study your plans and develop design details and costs. More facts in Sweet's, or send coupon.

and Steel Products



TRUSCON "O-T" Steel Joists give you predictable and dependable load-bearing capacity. Every Truscon "O-T" Joist-shortspan series—is quality protected. Each is backed by the Steel Joist Institute Seal of Approval. Be safe . . . avoid inferior quality. Specify approved Truscon "O-T" Steel Joists for lightweight, fireresistant floor and roof support. Send coupon for design data and loading tables.

THINKING "CURTAIN WALL"?

New Truscon booklet offers information to help architects, engineers and contractors make most efficient use of curtain-wall construction. It contains design data and detail drawings covering seven different Truscon Metal Curtain-Wall types, It shows how the Truscon system meets architectural and structural requirements without losing the benefits of efficient shop fabrication, with the designer maintaining full freedom of choice in



adapting the proper wall to the structure. Send coupon for your copy.

REPUBLIC STEEL CORPORATION Dept. C-3051 3110 East 45th Street Cleveland 27, Ohio

I'm interested in more information on these building products made by Republic's Truscon Steel Division.

- ☐ Vision Vent Window Walls ☐ Curtain-Wall Systems
- "O-T" Steel Joists

Name.

Firm.

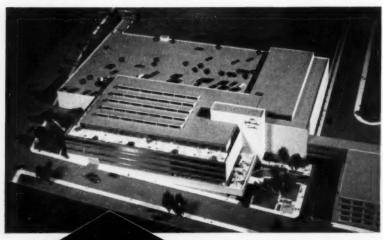
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Hallmark Cards

"wall of windows" building glazed and sealed with



PRESSTITE

Architect: Welton Becket, Los Angeles, San Francisco, New York

No. 162 Tape

The structural design of this handsome, well-lighted "house of glass" (home of famous Hallmark Cards) called for lots of glazing and sealing. Structural movement demanded a permanently elastic sealer that never hardens, chips or slumps.

Presstite No. 162 Tape was used throughout. Windows were glazed on the site (see drawing below). Porcelain panels were similarly sealed at the manufacturer's plant and shipped to the site.

No. 162 Tape remains pliable and adhesive, always assuring a tight, easy-to-apply seal against all kinds of weather... and is just one of many Presstite sealing and caulking compounds for window glazing, general caulking, expansion joints and curtain wall construction.

WRITE for working samples, literature, technical data.





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THE RECORD REPORTS WASHINGTON REPORT

(Continued from page 32)

BRI - BRAB PUBLICATIONS

Conference Proceedings

Weather and the Building Industry. A summary of present-day knowledge on climatology and its relationship to the research and practical aspects of the building industry. 158 pp., illus. Out of Print.

Fire Resistance of Exterior Non-Load-Bearing Walls. An examination of the design and engineering of exterior non-load-bearing walls with reference to standards, codes, fire protection, and construction practices in multi-storied buildings. 60 pp., illus. — \$3.50.

Laboratory Design for Handling Radioactive Materials. A compilation of knowledge in this specialized field, much of which was declassified for use in this conference. Laboratory construction, planning and equipment are fully discussed and related to agriculture, medical and industrial needs. 140 pp., 70 illus. — \$4.50.

Condensation Control in Buildings. A full record of the research status on this subject containing the most recent opinions of recognized experts in the field. Existing unsolved problems are delineated in general and panel discussions. 118 pp., 40 illus., plus tables and graphs. \$3.50.

Housing and Building in Hot-Humid and Hot-Dry Climates. A complete review of design and construction techniques for hot climate building, including phsylological and bioclimatic considerations. 17 major papers in full and summarized. 180 pp., over 130 illus. plus graphs and tables. — \$4.50.

School Building Costs. An analysis of methods to reduce the cost of school construction. Leading educators, school officials, architects and engineers formed working study group to draw up recommendations. 83 pp. — \$.50.

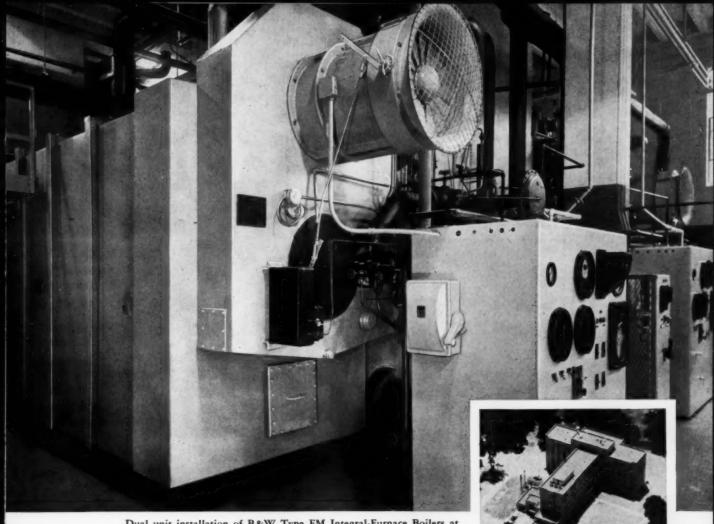
Porcelain Enamel in the Building Industry. A full review of the manufacturing and technical developments in the architectural application of porcelain enamel. 18 major papers presented by experts on chemical and physical properties of this material, design uses, engineering methods, and practical experiences on construction sites. 160 pp., over 100 ilius., plus graphs, charts and tables. — \$4.50.

Plastics in Building. A report on the past, present and future uses of plastics in the building and construction field. The book contains an introduction on the physical and engineering properties, a major section on specific uses, discussions on standards and codes, an exploration into the future, and summaries by a representative from the plastics industry and one from the building industry. 150 pp., 108 illus., drawings, graphs, charts. NAS-NRC Publication No. 337. — \$5.00.

Modular Measure. An examination of the history, present use and future of Modular Measure. Contractors, producers and architects report on the successful use of modular measure in their respective fields. Four papers explore the various aspects of its potentialities. 66 pp. — Out of Print.

Metal Curtain Walls. Contains the papers and discussions of a research correlation conference conducted by the Building Research Institute in 1955. There are reports of three independent surveys: the BRAB survey, the A.I.A. survey and the Detroit Edison survey. Other papers are on structural design techniques, panel insulation and condensation control, sound transmission, erection, and

(Continued on page 364)



Dual unit installation of B&W Type FM Integral-Furnace Boilers at Barberton Citizens Hospital. Consulting Engineers: William E. Bodenstein and W. W. Shuster. Architects: Samuel Hannaford & Sons. Heating, Ventilating, Plumbing: T. O. Murphy Company.

Low Cost Steam Does Many Jobs

B&W 'PACKAGE' BOILERS SERVE BARBERTON CITIZENS HOSPITAL

Two B&W Type FM Integral-Furnace Boilers are the reliable source of plentiful, low cost steam that is put to many uses at Barberton Citizens Hospital, Barberton, Ohio. The gas-fired boilers, which can also use oil as a stand-by fuel, are automatically controlled to operate under minimum supervision. Combined Capacity of the two units is 41,000 lbs of steam per hr, enough to supply an additional wing, should one be erected in the future. Both are "package" boilers, completely shop assembled. They only required service connections after installation. The 250-Bed hospital, with a total of 560 rooms, uses steam for heating, sterilizers, a restaurant serving 37,000 meals a month, and a laundry that can handle 131/2 pounds of linen per patient per day. Long Life, low maintenance, reliability, continuity of operation, and efficiency have been proved for B&W Integral-Furnace Boilers in hundreds of installations in institutions and industry throughout

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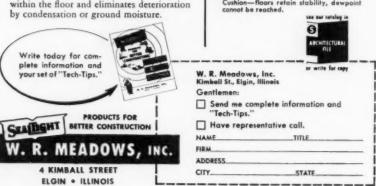
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The installation of wood flooring on grade or subgrade slabs presents certain problems. The movement of free moisture and vapor transmission, from the site, through the slab and into the structure must be prevented. A 'stacking of humidity" can raise the humidity to a level where a dewpoint can readily occur within the floor itself . . . buckling and rotting quickly follows.

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80° - 50° RELATIVE HUMIDITY

55° GROUND TEMPERATURE

Construction without Vapor Seal or Under-floor Cushion—Active dewpoint causes rotting and buckling.

| 80° - 50° RELATI | VE HUMIDITY |
|--|---|
| CORK | TITE UNDERFLOOR |
| 1 1 | CUSHION |
| Marin San San San San San San San San San Sa | *************************************** |
| \$ / | |
| SS GROUND | TEMPERATURE |
| 1 | ED MEMBRANE |

Construction with Vapor Seal and Underfloor Cushion—floors retain stability, dewpoint

THE RECORD REPORTS WASHINGTON REPORT

(Continued from page 360)

"summary and future outlook," 190 pp., illus. NAS-NRC Publication No. 378. - \$4.00.

Floor-Ceilings and Service Systems in Multi-Story Buildings. This conference had as its central theme the integration of the building structure and its service systems for the most efficient performance of the multi-story building as an environment for human activity. 18 major papers plus discussions. 150 pp. approx., illus. NAS-NRC Publication No. 441. - \$4.00.

Modern Masonry: Natural Stone and Clay Products. - \$4.50.

Windows and Glass in the Exterior of Buildings. In press.

Reprints of BRAB Reports to FHA

Slab-on-Ground Construction for Residences. NAS-NRC Pub. No. 385. - \$2.00.

Effect of Automatic Sequence Clothes Washing Machines on Individual Sewage Disposal Systems. NAS-NRC Pub. No. 442. — \$1.50.

Installation of Wood Block Flooring by Adhesive Bonding. NAS-NRC Pub. No. 443. -\$1.50.

Performance Characteristics of Domestic Water Heating Equipment. NAS-NRC Pub. No. 444. - \$1.50.

Vapor Barrier Materials for Use with Slab-on-Ground Construction and as Ground Cover in Crawl Spaces. NAS-NRC Pub. No. 445. -\$1.50.

Anchorage of Exterior Frame Walls to Various Types of Foundations. NAS-NRC Pub. No. 446. - \$1.50.

Cracking of Concrete Face Brick and the Development of Data Necessary for the Establishment of Criteria for Its Manufacture and Installation. NAS-NRC Pub. No. 447. - \$1.50.

Protection Against Decay and Termites in Residential Construction. NAS-NRC Pub. No. 448. - \$1.50.

Reprints of Federal Construction Council Reports

Roof Decks and Built-Up Roofing. No. TR-1. - \$1.00.

Air Conditioning in Federal Buildings. No. TR-2. - \$1.00. Out of Print.

Warehouse Design. No. TR-3. — \$1.00. Summaries of Two Research Reports on

Plumbing Systems and Water Supply. No. TR-4. - \$1.00. Out of Print.

Selection of Windows. No. TR-5. - \$1.00. Self-Contained Air Conditioners. No. TR-6. - \$1.00. Out of Print.

Space Allowances of Offices and Ceiling Heights in Office Buildings. No. TR-7. - \$1.00.

Pressure Drainage Systems for Buildings. No.

TR-8. - \$1.00. Out of Print. Climatic Data for Determining the Need for

Cooling Equipment. No. TR-9. - \$1.00. Packaged Type Boilers. No. TR-10. - \$1.00. Out of Print.

Electrical and Load Growth in Buildings, No. TR-11. - \$1.00.

Other Publications

Building Science Directory. The beginning of a comprehensive guide to sources of information on research and technical developments in the building industry. In looseleaf form; pages to be added periodically. Free to BRI participating members; to non-members, \$2 a year.

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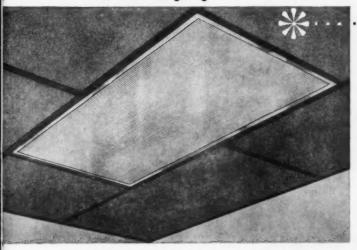
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LIGHTING
CHELSEA 50. NASSACHUSETIS

the 24" wide troffer from Smithcraft

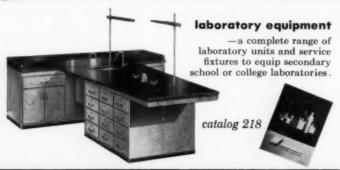
Extremely versatile, architecturally integrated recessed lighting, Smithcraft two-foot wide troffers permit wide freedom in the creation of interesting and functional lighting patterns. They present a modern, trim, clean appearance free from light leaks or blemishes and with no visible catches, hinges, or screws. In glass or plastic-shielded units, a clean expanse of shielding is uninterrupted by cross-braces. Doors open or close with simple upwards pressure (patented) and simply lift off for maintenance. In louvered units, louvers are held by Smithcraft's patented Duo-Cam hangers. Louvers hinge from either side and are removed without tools or loose parts.



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SPECIALIZED SCHOOL EQUIPMENT

THE RECORD REPORTS REVIEWING THE RECORD

Footnotes to architectural history, from the Architectural Record of 1907:

The A.I.A. at fifty: "The next convention of the American Institute of Architects," announced the January RECORD, "to be held in Washington City January 7, 8 and 9, 1907, will commemorate the fiftieth anniversary of the Institute. . . . It is proposed to make this a notable meeting. A bronze memorial tablet, containing the names of the founders of the Institute, will be unveiled in the Octagon, commemorating the occasion. During this meeting the Institute will inaugurate the custom of presenting a gold medal for distinguished merit in architecture. The first medal will be presented to Sir Aston Webb, the architect of the Victoria Memorial, London, who received the gold medal of the Royal Institute of British Architects and a knighthood during the past year."

A national study of municipal parks, a small and local hint of Mission-66-type efforts, and of Federal involvement in public welfare, was urged by one G. A. Parker, speaking at a convention of the American Association of Park Superintendents reported in the January issue. "The indications," said Mr. Parker, "are that within a generation or so about one-half of the nation's children will be born and brought up under urban conditions. . . . It is therefore imperative that city conditions be made such that children city born and bred may have such environments as will enable them to grow into healthy and (Continued on page 372)



Reporting on the Rochester Trust & Safe Deposit Company by York & Sawyer in the January 1907 issue, the editors observed the firm's debt to McKim, Mead & White, who had trained the younger architects, but noted "a greater departure from historical precedent"



Architects: Skidmore, Owings & Merrill General Contractors: George A. Fuller Company

Structural Engineers: Weiskopf & Pickworth

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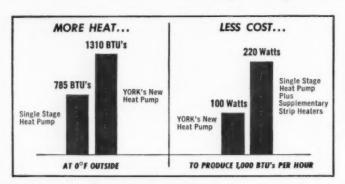
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Even when it's zero, there's enough heat in the outside air . . .



Now! York heat pump takes warmth out of



MORE HEAT AT LESS COST! As shown in the chart at left YORK'S new air-to-air heat pump system* produces 67½% more heat at 0°F outdoor temperature than the former single-stage system of the same mechanical displacement. To supply the same heat output with the single-stage system would require supplementary strip heating and total wattage requirement would be 120% greater per 1000 BTU than YORK'S new compound compression system.

*Patent applied for.



FIRST MAJOR INSTALLATION

was at Heironimus department store in Roanoke, Va. served by the Appalachian Power Co. of The American Gas and Electric System.

Hayes, Seay, Mattern and Mattern, Architects and Engineers; B. F. Parrott and Co., Contractor.

NEW BUILDING for Ballinger Co. of Philadelphia features York heat pump, and is served by The Philadelphia Electric Co.

Ballinger, Architects and Engineers; J. S. McQuade, Jr., Contractor.





sub-freezing air to heat an entire building

DRAMATIC ADVANCE MAKES HEAT PUMP PRACTICAL—WITHOUT SUPPLEMENTAL HEATING

The development by York engineers of the first practical heat pump to use below-freezing outside air promises convenient, more economical year-round air conditioning with a single system. No longer will supplementary strip heating equipment be needed in areas where winter temperatures drop below freezing.

The big difference in the York heat pump is that it takes advantage of a long-utilized refrigeration technique, compound compression. The system is operated by thermostatically controlled valves. These valves guide hot or cold water in and out of the system while compressors automatically move from single-stage compression into compound compression when the temperature drops below a certain point. Now that the high-operating-cost problem of auxiliary strip heating,

needed where temperatures drop much below 32° F., has been eliminated, builders and owners can offer customers year-round air comfort at lower annual cost.

Electric Utilities faced with uneconomical air conditioning load factors will now be able to profitably promote the heat pump above the Mason-Dixon line. Until now the high operating cost of the air-source heat pump has limited application in Northern areas. But elimination of heat pump capacity deficiencies at low temperatures and removal of the very low load factors of strip heaters makes the new system attractive to both user and utility. For full details on the York heat pump write: York Corporation, subsidiary of Borg-Warner Corporation, York, Pennsylvania.



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THE RECORD REPORTS REVIEWING THE RECORD

(Continued from page 368)



"Chateau Schwab," modeled by architect Maurice Hébert after Chenonceaux, was considered in the February issue an excellent example for other billionaires to follow, at least in respect to its site in the middle of a "whole block of ground on Riverside Drive" in New York

vigorous men and women, physically, mentally, morally and spiritually, and the function which is to have the most important bearing on this work is the park." Mr. Parker asked that the Federal government investigate the popular use of parks and prepare comparative studies.

The risk a pioneer runs is failure, as the architects of the Bixby Hotel at Long Beach, Cal., learned. The February RECORD noted engineer John E. Leonard's analysis of the failure of the reinforced concrete building: "The steel reinforcement was found insufficient to do its work of transmitting the tensile strains to the proper members. Girders were run in one direction only, and these parallel to the greatest spacing of the columns which revealed the absence of any adequate tie at floor levels. This means no lateral bracing for floors or walls, and that the floor panels are enclosed by girders on two sides instead of on all four and double reinforced, as is customary in good reinforced concrete construction." On the other hand, an engineer who read this piece recently was heard to mutter that times haven't changed so much.

Building Type, 1907: said the March Notes and Comments column, presenting photographs of two riding academies built for the Vanderbilts, "Now that well-to-do people spend a large part of the winter, as well as much of the summer, in the country, the practice of adding riding academies to the other buildings connected with large estates is

(Continued on page 376)

a Wall of Ro-Way Doors



ups Warehouse Efficiency

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Coming in mid-May . . . a bonus all-house issue for Architectural Record subscribers . .

RECORD HOUSES OF 1957

Eliot Noyes House Architect: Eliot Noyes Photographer: Ezra Stoller Again in 1957 Architectural Record subscribers will receive, besides their regular May issue, a bonus mid-May issue featuring the largest and most colorful presentation of America's finest architect-planned houses ever made by a magazine.

Record Houses of 1957 will be more than a unique permanent record of architectural taste and achievement in the current year. It will be a rich source of design ideas from the planning boards of many of America's most talented architects... some widely known, others whose work will be published for the first time.

In addition, highly visual presentation of each house, coupled with a clear statement of the problems and purposes behind its planning, will make *Record Houses* of 1957 an ideal tool for opening clients' eyes to ways in which architecture can serve their individual needs, aspirations and way of life.

DON'T MISS THESE OUTSTANDING FEATURES:

- A selection of twenty-five of the best architect-planned houses of the year in the \$20,000 to \$60,000 price range. One hundred pages—many in full color presenting the work of such architects as Edward Barnes; Mario Corbett; David, Brodie & Wisnewski; Philip Johnson; Carl Koch; George Matsumoto; George Nemeny; Eliot Noyes; Minoru Yamasaki.
- Major elements of house design—Including "close-ups" of the design of bathrooms, kitchens, fireplaces, stairs, entrances, storage and built-ins.
- A comprehensive editorial round-up of New Products for the House and Manufacturers' Literature.
- A full-range presentation, in the advertising pages, of 1957 materials, equipment and furnishings for the quality house.

NATIONWIDE BOOKSTORE DISTRIBUTION IN JUNE

More than ten thousand copies of "Record Houses of 1957" have been reserved for bookstore distribution. They will expose a significant segment of the house building and buying public to the benefits of architectural counsel in planning a new house.



ARCHITECTURAL RECORD

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| 14" x 14" | 12" x 12" | 14" x 17" | 12" x 12" |
| 18" x 14" | 16" x 12" | 18" x 17" | 16" x 111/2" |
| 11%" x 14" | 9½" x 12" | 111/2" x 17" | 91/2" x 12" |
| | | 14" x 14" | 12" x 91/2" |
| Two Bowl Flat | Rim | Two Bowl-Led | lge |
| 28" x 14" | 12" x 12" | 28" x 17" | 12" x 12" |
| 22½" x 14" | 91/2" x 12" | 221/2" x 17" | 91/2" x 12" |
| | | 271/2" x 14" | 12" x 91/2" |

Illustrated is a single bowl bar sink with back ledge



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The only complete line of stainless steel sinks . . . Lustertone 8, Elkay Custom, Pacemaker, Starlite, Design U-2000, Sit-down 8.

THE RECORD REPORTS REVIEWING THE RECORD

(Continued from page 372)

becoming more and more common, and it may be expected that during the next ten years the architects of such estates will have many buildings of this class to design. They can, undoubtedly, be made useful in more ways than one. . . . They could, for instance, be used at times for indoor tennis courts; and it is probable that before long some rich man will carry out the idea of including within one large structure a combination of casino and riding academy, which would contain the means of enjoying all sorts of indoor games and sports, such as riding and driving in the ring, squash and tennis courts, billiards, bowling and a pool."

The impermanence of architecture: in one part of the March issue, a staff writer quoted James Renwick, architect of St. Patrick's Cathedral, who believed that "the business of an American architect was to build things that would stand and be presentable for about 30 years, after which they were fairly sure to yield to 'the principle of vicissitude and the effluxion of things." And in the Notes and Comments department of the same issue, another writer, deploring the wholesale razing of a number of New York's early skyscrapers, asked: "The fame of the painter, the sculptor or the architect has always had the unperishable witness of his works, but will not the fame of the American architect like that of an actor be preserved only by tradition or by written memorials? A hundred years from now, may it not be that the habitation of the reputation which an American architect leaves behind him will not consist in stone and steel buildings, but in the dim and motheaten pages of some Architectural RECORD3



The new campus for the City College of New York, still under construction, was reviewed in the March 1907 issue; George B. Post was the architect

(More news on page 380)



Mueller Climatrol Unit Heaters Win Wide Favor in Multi-Unit Commercial Buildings

Because they save construction and labor costs required to install central heating plants and ducts, Mueller Climatrol unit heaters are the ideal choice for multi-store shopping centers and similar installations. In fact, their steady warmth and high fuel efficiency win friends fast in any space heating application. Made in many sizes for either gas or oil-fired operation.

Quick response to demands for heat is assured with either manual or automatic regulation, thanks to horizontal air tube construction of heat exchanger which speeds heat transfer.





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"A REAL CONTRIBUTION TO SCHOOL PLANNING LITERATURE" John Lyon Reid

TOWARD BETTER SCHOOL DESIGN by William W. Caudill

So complex is today's task of designing a good school that architects need planning information that goes beyond physical considerations into the social, economic and cultural forces which affect the school system. At the same time they need practical information that offers concrete solutions to planning problems that they are encountering daily.

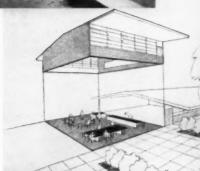
TOWARD BETTER SCHOOL DESIGN contains this vital information. Working from his immediate experience, William W. Caudill successfully relates school design to the aims and methods of education, to the influence of environment on the learning process, and to the role of schools as community institutions. He shows how the planner must assess every factor, weigh each one, and plan an architectural solution to his specific educational, economic and environmental problems.

William W. Caudill is eminently qualified to render aid and advice on the task of planning schools and school building programs. In his twenty-year school planning career he has won an international reputation for combining a practical approach with exciting creative vision. As research architect at the Texas Engineering Experiment Station of Texas A. & M., he pioneered studies of classroom shapes and sizes as related to physical and emotional environment, and formulated many of the basic principles upon which good schools are being built today. During the last four years he has designed over fifty schools and has lectured and served as a consultant throughout the United States.

Education and Environment: Caudill demands that a good school must be designed from the inside out, and "every idea, every material, every dollar related to the needs of the pupil." What are the physical and emotional needs of the pupil? How does the learning process affect the form of the building? What is the best physical and emotional environment in terms of room shape and size, fenestration, ceiling height, light, color, textures, acoustics, ventilation, landscaping?

Economy: Caudill attacks the problems of costs head-on. He clearly differentiates between "low-cost" schools and "economical" schools, and quotes actual cost figures to illustrate his points. He explains how to set up a cost-control plan, and how total costs are affected by land, shape and size of building, materials, structural frame, construction methods, space allocation, and service equipment. He compares prime and maintenance costs to show how "saving" on one may produce serious loss on the other. Finally, he discusses the proper timing of bid-letting as a cost-cutting tactic.





SEVEN EXTENSIVE SECTIONS

the PUPIL and the school plant
EDUCATION and the school plant
ENVIRONMENT and the school plant
ECONOMY and the school plant
CITY PLANNING and the school plant
the DIVISION OF SPACE for effective education
the PLANNING PROCESS and the school plant

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91 SPECIFIC CASE-STUDIES FROM ACTUAL PROJECTS

Each case study is presented in 3 parts: 1) the Problem, 2) the Approach, 3) the Solution. Here are a few of them:

Can boiler rooms have educational functions?

How can a very small site located in enormously expensive property be best utilized?

Can improvements in the appearance and economy of hardware be made?

Can corridors be used for educational purposes?

What is a good way to provide easel painting in Kindergarten?

Can a school library be designed to serve the community? Can toilets be designed to minimize control problems?

Can open type corridors be used successfully in Northernmost areas?

Can low budget gyms be lighted by natural means effectively? Can improvements be made on combination of cafeteria service with other school functions in an elementary school?

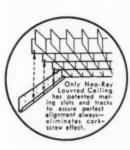
Can a highly compact school plant have decentralized classrooms?

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(Continued from page 376)

ON THE CALENDAR

March

- 4-6 The 12th annual conference, Association for Higher Education of the National Education Association — Chicago
- 11-14 Annual convention, Associated General Contractors of America

- Statler and Mayflower Hotels, Washington, D. C.
- 11-15 Second Nuclear Engineering and Science Congress of the Engineers Joint Council — Convention Hall, Philadelphia
- 14-15 Fifth Conference on Atomic Energy in Industry sponsored by National Industrial Conference Board Benjamin Franklin Hotel and Convention Hall, Philadelphia
- 17-21 Annual Planning Conference, American Society of Planning

- Officials Sheraton Palace Hotel, San Francisco
- 18-21 Annual national conference, Society of the Plastics Industry Hotel Biltmore and Shrine Exposition Hall, Los Angeles
- 27-29 American Power Conference, sponsored by Illinois Institute of Technology in cooperation with 14 other universities and nine local and national technical societies Hotel Sherman, Chicago
- 29-30 Great Lakes Regional Conference, American Institute of Architects Louisville, Ky.
- 31ff The 26th annual conference, American Institute of Decorators; until April 3—Statler Hilton Hotel, Dallas

April.

- 1-6 Convention, Royal Australian Institute of Architects — Melbourne
- 3-5 Annual meeting, Committee on Art Education — University of Michigan, Ann Arbor, Mich.
- 3-6 Annual convention, The American Federation of Arts Hous-
- 4-6 South Atlantic Regional Conference, American Institute of Architects; theme, "Architecture and Man" Hotel Biltmore, Atlanta
- 8-12 Annual national spring meeting, American Welding Society— Hotel Sheraton, Philadelphia
- 9-10 Conference on Electronics in Industry, sponsored by Armour Research Foundation and Professional Group in Industrial Electronics, Institute of Radio Engineers Illinois Institute of Technology, Chicago
- 9-11 Fifth Welding Show, an industrial exposition sponsored by the American Welding Society—
 Convention Hall, Philadelphia
- 12-13 Second Conference on Urban Design Graduate School of Design, Harvard University, Cambridge, Mass.
- 14-27 U. S. World Trade Fair, an international exposition — Coliseum, New York City
- 15-17 Annual meeting, Building Research Institute — Drake Hotel
- 24-25 National Industrial Conference, sponsored by Armour Research Foundation — Conrad Hilton Hotel, Chicago
- 29ff Seventh National Materials Handling Conference and National (Continued on page 384)



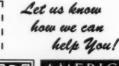
e realize that Technical Departments are only one segment of the vast complex which an Architect must integrate into the functional unit required for today's hospital • Yet they are a vital segment ... and changing. Standards, techniques and equipment are advancing almost from day to day.

As the world's largest designer and manufacturer of Surgical Sterilizers and related hospital equipment, we at American Sterilizer have pioneered many currently accepted techniques and technical departments. And we are constantly researching others which hold promise.

* We have, in short, authoritative and current data of professional interest to every Architect engaged in a hospital project.

Much of that information is summarized in your current Sweet's Architectural File. But more than that, our Technical Sales Division is available for consultation and for the preparation of room plans, specifications and rough-in drawings related to your specific project. As we said, we like to be helpful.

Central Sterile Supply Departments Solution Rooms Milk Formula Rooms Sub-sterilizing Rooms Central Instrument Rooms Utility Rooms

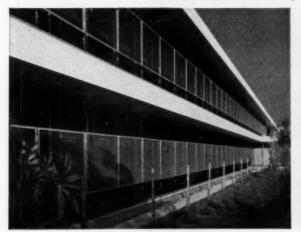




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Entrance side of administration building ... note novel expanded metal "sunshade."



Roof overhang and panels of louvered screen reduce sun glare on south side.



15' Canopy held by structural planting trellises shades cafeteria entrance.

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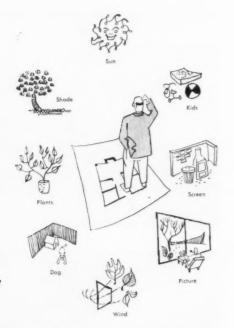
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THE ART OF HOME LANDSCAPING by Garrett Eckbo is a book which will assist you in planning new homes and grounds as an integrated whole, point out pitfalls, and help you prevent wasted outdoor space.

THE ART OF HOME LANDSCAPING studies, in logical sequence, hundreds of topics such as these:

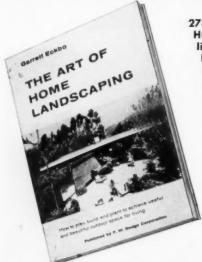
The general factors which are basic to all landscape problems — climate, topography, vegetation, soil, lot size, family composition and attitude.

The effect of building materials on landscape design. Planning beautiful grounds for a minimum of maintenance.

Planning a garden relying chiefly on structural materials for form and beauty with little or no planting. The effect of building materials on landscape design.

The relationship between home and neighborhood as it affects each family.

THE ART OF HOME LANDSCAPING is a quality book, and an unusual book. It contains no pat, stereotyped answers; no "Typical average layouts for typical average families." The book makes demands on you as you read it: Imagine . . . Think . . . Decide . . . Plan . . . Re-plan. This book will assist you to create individual solutions to individual problems — to create a richer fulfillment of outdoor space.



ABOUT THE AUTHOR

Garrett Eckbo writes with contagious enthusiasm for his subject. In addition to his book authorship, he has been writing for magazines and professional journals since 1937. Eckbo, considered by many to be America's foremost landscape architect, has in his twenty-year career designed the outdoor portions of hundreds of homes, as well as housing projects, schools, colleges, community centers, hospitals, and other projects.

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CLASSROOM-LABORATORY BUILDING, NORTHEASTERN UNIVERSITY, BOSTON, MASS.

Architect: Shepley, Bulfinch, Richardson & Abbott

Contractor: John A. Volpe Construction Co., Inc.

HOPE'S CUSTOM STEEL WINDOWS

were chosen for this classroom-laboratory building at Northeastern University in Boston, Mass. It contains 110,000 square feet of floor space and incorporates 42 classrooms, 8 laboratories, 12 offices and 5 conference rooms. Hope's Steel Windows were used to form vertical glass bays extending from the first floor to the top. Awning type ventilators provide comfortable and healthful air circulation while providing maximum protection from inclement weather. Abundant natural light is admitted making all working areas cheerful and restful.

More and more throughout the country Hope's Windows are being used in finer buildings because of their greater strength, rigidity and weather-tightness and because of their design flexibility that fits any architectural style.

When next you have a building in the planning stage, why not investigate Hope's Windows? Full information and planning assistance are always available without obligation. In the meantime, write for Catalog 152 AR or see Sweet's Architectural File.

HOPE'S WINDOWS, INC., Jamestown, N.Y.

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS.

(Continued from page 380)

Materials Handling Exposition: until May 3 — Convention Hall, Philadelphia

May

- 4-12 Showcase for Better Living; International Home Exposition — Coliseum, New York City
- 6-10 Convention and Exposition, National Restaurant Association — Navy Pier, Chicago
- 14-16 Industrial Nuclear Technology Conference, sponsored by Armour Research Foundation, and Nucleonics Magazine — Museum of Science and Industry, Chicago
- 14-17 Centennial Celebration Convention of the American Institute of Architects — Washington, D. C.
- 20-22 Design Engineering Show and (sponsored by the machine design division of the American Society of Mechanical Engineers) second annual design conference — The Coliseum, New York City
- 20-24 Annual meeting, National Fire Protection Association — Hotel Statler, Los Angeles
- 29ff Annual Assembly, Royal Architectual Institute of Canada; until June 1 Chateau Laurier, Ottawa

OFFICE NOTES

Offices Opened_

- John Lawrence Daw, Architect, has announced the opening of his offices at 5509 Brookside Blvd., Kansas City, Mo.
- A. M. Kinney Associates, Architects and Engineers, a branch of the Cincinnati firm A. M. Kinney, Inc., have opened offices at 60 E. 56th St., New York City; A. M. Kinney and Charles Burchard are the partners. Max Cardiff will be executive director of the office and David Anderson will head architectural design.
- J. West, A.I.A., and Elizabeth B. Waters, Architect, have formed the partnership of West and Waters, Architects, with offices at 1342 McAnsh Square, Sarasota, Fla.

Firm Changes_

- Clark and Poole, A.I.A., of Kingstree,
 S. C., will continue the practice of J.
 Whitney Cunningham, Clark and Poole.
 Partners are J. Franklin Clark Jr.,
 A.I.A., and Frank B. Poole Jr., A.I.A.
- Curtis and Davis and Associated Architects and Engineers have named Walter J. Rooney Jr., A.I.A., and Sidney J. Folse Jr., A.I.A., as associates in the firm.
- Erhart, Eichenbaum, Rauch and Blass, Architects, is the new name of the firm of Erhart, Eichenbaum and Rauch, following the admission of Noland Blass Jr., A.I.A., as partner. Offices are at 201 Chester St., Little Rock, Ark.
- Adolph Goldberg, A.I.A., announces the admission of Herbert Epstein, A.I.A., as a partner in his firm, now known as Adolph Goldberg Associates. The firm is located at 164 Montague St., Brooklyn 1, N. Y.

New Addresses.

- C. Melvin Frank, Architect, 1650 W. Fifth Ave., Columbus 12, Ohio
- Cyrill H. Pfohl, A.I.A., 713 O'Hanlon Bldg., Winston-Salem, N. C.

(More news on page 386)

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and confidence of architects everywhere... distinctively styled in durable vitreous china, with HAWS vandal-proof features for superior sanitation and performance.

And the same holds true for electric water coolers, multiple fountains, recessed models ... all types ... beautifully styled in all modern materials ... and engineered for faultless performance.



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Get full information in the new 1957
HAWS Catalog. Photos and detail drawings of hundreds of "style leader" fountains.

new thin wall stone panel construction REDUCES WALL WEIGHT, NSULATES AND SPEEDS ERECTION

Only 4" in total thickness, a new thin wall panel recently perfected by the Indiana Limestone Institute which provides a very high insulating value, is composed of 2" of limestone facing mechanically fastened to 2" of Tectum, a rigid-type insulating board.

Several pieces of stone applied to a single piece of Tectum are set as one unit, or a large panel. Masons working with this new material for the first time on the Meadows Shopping Center in Indianapolis, achieved the rate of approximately 1,200 square feet per day.

Panels are anchored into the backup, or structural steel, with strap anchors and dowels. This type construction is very practical and can be adapted to various designs. For further information and details, write today. Address Dept. AR-357.

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... ALUNDUM Terrazzo **Provides Walking Safety** in Restaurants

The New York Thruway Authority has provided safety for the motorist not only on the highway but also in the restaurants and gift shops. The floors are attractive terrazzo made permanently non-slip by ALUNDUM Aggregate. Neither spilled liquids nor moisture tracked in on stormy weather days will cause a slipping hazard.





Corner House Restaurant Clifton Springs, New York

ALUNDUM Terrazzo by DePaoli Mosaic Co. Boston, Mass.

For full information on ALUNDUM Aggregate terrazzo floors and ALUNDUM C.F. Aggregate cement floors consult SWEET'S FILE or write Catalog 1935R.



NORTON COMPANY WORCESTER 6, MASS.

THE HOUSES WOMEN WANTED: LUMBER DEALERS INTERPRET

The three houses shown in the photograph above represent the result of the National Association of Lumber Dealers' effort to produce composite houses embodying all the counsels of those 103 famous ladies who made up the Women's Housing Congress sponsored last spring in Washington by the Housing and Home Finance Agency.

All three houses (photographs of plans on page 388) were architect-designed. They have been built in Munster, Ind., as model houses for public viewing; plans of all of them are being made available "to retail lumber dealers only" through National Plan Service. The houses themselves will eventually be offered for sale.

N.R.L.D.A. says the houses demonstrate "the 59 basic features that representative American housewives want in their homes.'

The "principal features" of the three houses, "as agreed to by the housewives attending the Congress," are listed by N.R.L.D.A. as follows:

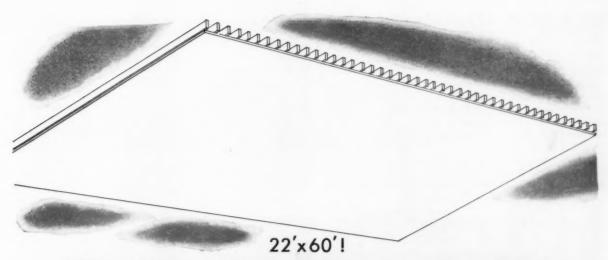
1. Each home has two separate areas an informal living area located in the rear where the family can work and relax in privacy - and a formal or public area located in the front or street side.

2. The kitchens are on the rear side, facing south, so that they receive maximum sunlight and permit easy supervision of the children's play area in the back yard.

3. Each house has a family room for informal living, and a parlor or living room in the front of the house where it can be kept neat and presentable to receive unexpected guests or important callers. The living rooms are smaller than usual because part of their function will be performed by the family

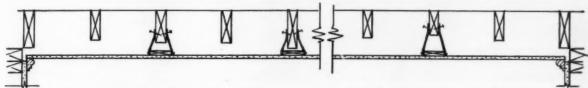
4. The bedrooms are located away from the noisy part of the house and are

(Continued on page 388)



WILSON AIR-FLOAT CEILINGS

... continuous, crackproof coverage for any area



CASE HISTORY: Two ceilings to be covered—each measuring 22' x 60'. The bottoms of the joists were out of line by as much as four inches.

Wilson Air-float Ceilings proved to be the only type of construction that could meet this situation—economically.

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THE BUILDER said:



The fastest method of putting up a ceiling I've ever seen.

THE DEALER said:



Remarkable! A whole new market for me; I can keep one applicator busy on this alone.

THE CARPENTER said:



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blueprint information on this simple, but revolutionary, new "continuous dry-wall" method of ceiling construction. The whole ceiling literally floats — free to expand or contract as a unit — in either overall dimension. Economical and quick to apply — three men cover a minimum of 200 square feet per hour! In new construction,

THE PLASTERER said:



I'd have lost my shirt trying to level up before I could have plastered that ceiling.

ceilings can be hung directly to rafters or collar beams—with no ceiling joists or bearing walls! The surface material is weatherproof Homasote; takes paint, stain or wallpaper. All other materials are standard and inexpensive. No special equipment required. Write for the facts today! Kindly address your inquiry to Department C-17.



HOMASOTE

TRENTON 3, NEW JERSEY

COMPANY

(Continued from page 386)

insulated by halls and closets.

5. Each house has a back or side entrance opening near, but not into, the kitchen, adjacent to a half bath and a clothes closet so that children and the husband won't have to track mud into the rest of the house.

6. The homes are so planned that noisy older children in the family room will not interfere with young children sleeping in the bedrooms, with mother reading in the living room, or with father working in a bedroom-den.

7. Space is arranged so there will be a minimum of family traffic through the living room and dining room, thus minimizing cleaning, wear and tear, and noise.

8. The kitchens are U-shaped, to save time and steps, with room for two people to work at one time, cupboards from floor to ceiling, ample space and electric outlets for future appliances, and laundry or utility room near by. The kitchens have convenient access to all parts of the house.

9. The family rooms are located convenient to the kitchens, so that the housewife can supervise playing children while preparing meals or cleaning up, and have room for a sofa-bed, easy chairs, and closets for toys, games and hobby equipment.

10. Bathtubs are located away from windows, toilets are wall-hung to facilitate cleaning, and lavatories are higher than usual for ease in bathing babies and have storage space underneath.

11. Each bedroom has two closets or one large one; there is a linen closet near the bathroom, and a cleaning closet near the kitchen.

12. The houses have foyers or vestibules which do not give a view of other rooms and in which outer garments can be removed and hung up in an adjacent clothes closet.



House No. 1 (Edward Marks, A.I.A., of Evanston, Ill., architect) is split-level containing 1922 sq ft; below bedrooms: family room, laundry, utility



House No. 2 (James Fetridge, Palmdale, Cal., architect) is onestory, provides 1418 sq ft



House No. 3 (Edwin Bruno, A.I.A., Skokie, Ill., architect) is also onestory, provides 1623 sq ft

(More news on page 390)



SCHOOL LAB SPACE PROBLEMS

For many secondary schools, Kewaunee "Perimeter Planning" is the ideal solution to the need for combination science laboratories. As the Avon Lake (Ohio) High School recently discovered, Kewaunee "Perimeter Planning" offers many advan-

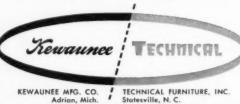
- · Utilizes exterior and end walls for student work tables
- Provides ample tablet-armchair area in center of room
- Allows space for auxiliary demonstra-tion or student project table

- · Assures ready access to fume hoods, key cases, storage area
- Permits unusually compact, efficient arrangement
- Takes maximum advantage of window light

To get such maximum use from minimum space . . . and lower cost per year of service . . . you'll find it pays to consult Kewaunee. Our planning and engineering staff is at your service, without cost or obligation. To get all the facts-without fiction or pressure-call the Kewaunee Man now.



LABORATORY PLANNING MANUALS See typical "Perimeter Planning" layouts and other Kewaunee planned science room layouts. Mail coupon for 48-page Planning Manual and 44-page Educational Laboratory Equipment catalog



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- ☐ Have your representative call. Please send, without cost or obli-
- gation. Educational Laboratory **Equipment Catalog and Planning** Manual.

Title Address

City



New Johns - Manville Imperial Marinite Asbestos Movable Walls create truly distinctive offices for the discriminating business executive.

Imperial Marinite Walls are noncombustible. They are not only easy to dismantle and re-erect, but are also specifically designed to meet the most exacting decorative and architectural standards. The panels are flush and projection-free, come in standardized and interchangeable units to insure maximum flexibility. A different finish or panel arrangement may be used on opposite faces of each partition.

J-M Imperial Marinite Movable Walls are prefinished in three standard stippled, textured colors: light green, light tan and light gray. Also they are supplied, on order, in stippled solid colors and many other textured colors. This special hard, tough finish is scratch- and stain-resistant, easy to clean and touch up if damaged. Imperial Marinite Walls are also available in the natural asbestos cement gray finish for field decoration.

Undivided responsibility for a complete job

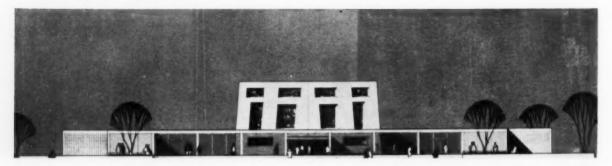
Imperial Marinite flush or glazed partitions are furnished and erected by the Johns-Manville Construction Department, complete with doors, door hardware, glass and trim.

For complete details about Johns-Manville Asbestos Movable Walls, be sure to consult your Sweet's Architectural File, or write Johns-Manville, Box 158, Dept. AR, New York 16, New York. In Canada, write 565 Lakeshore Road East, Port Credit, Ontario.

See "MEET THE PRESS" on NBC-TV, sponsored on alternate Sundays by Johns-Manville



Johns-Manville

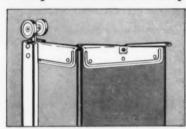


One quotation was \$231 per folding wall... Bemiswall was \$126!

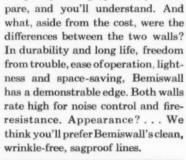
Recently a church in a Wisconsin city asked for quotations on folding walls to separate church school rooms. One quotation, for an excellent product, was \$231 per wall. The other quotation, for another excellent product-Bemiswall-was \$126 per wall. The quotations were, of course, for walls of the same size and with the same requirements.

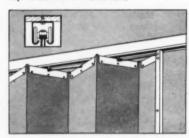
Simplicity of design, primarily. Com-

Why is Bemiswall priced so much lower?

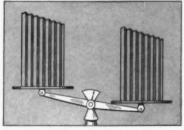


Trouble-free Hinge - Plastic on the heavily coated side of Bemiswall is scored to make a broad, resilient folding point from top to bottom of the curtain,





Sturdy Suspension—Bemiswall is suspended on silent-running, long-wearing nylon rollers in a rigid, enclosed, heavygauge steel track.



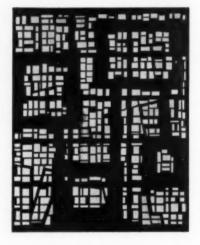
Light Weight - Despite its durability and long life, Bemiswall is substantially lighter than comparable folding walls. Simple design minimizes heavy "hardware."

Send for a sample of Bemiswall material and complete information showing why Bemiswall is the most economical, practical solution for dividing room space.

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Appellate Court scheme puts courtroom, as "the essential functional element," in central unit treated as "the most important esthetic element." Use of stained glass (photo of one of panels below) is intended to add to this emphasis. As to the effect within, the designer says, "Here natural light is used as a two-dimensional wall pattern within a stained glass in cement surface"



STAINED GLASS DESIGNED FOR AND INTO BUILDINGS

"A New Look at Stained Glass in Architecture" was the title of a monthlong exhibit last year at the Architectural League of New York and the raison d'être for the building designs and stained glass concepts shown on this and the following page. They are the work of two young designers - Michael Savoia. who evolved the architectural concepts, and Christopher Scadron, who created the stained glass.

The idea of the collaboration was to show how effectively contemporary architecture and stained glass can complement each other in secular as well as sacred architecture when architect and designer work with real awareness of,

(Continued on page 392)





"...most talked-about feature!"
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"...helps sell new homes!"

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From all parts of the country, builders write that Luxtrol is making a big hit with home-buyers . . .

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Rolling Ridge Homes, Northport Village, Long Island "... prospective buyers are most fascinated by LUXTROL. They love the idea of dialing any degree of light they want—from a dim glow to complete brightness!... really helping to merchandise houses!"

Ernest Widmer, Builder, Daytona Beach, Florida "LUXTROL Light Controls help sell homes because they're trouble-free, economical to purchase and operate, and they provide easy selection of light levels for any occasion . . ."

H. C. Roberts & Sons, Anaheim, California "Our Electri-Living Home includes all the latest products...the unequalled flexibility of light provided by LUXTROL is definitely outstanding. It gives the homeowners light for every mood and every seeing need."

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391

(Continued from page 390)

and respect and sympathy toward, each other's craft.

The two projects presented were a courthouse (page 390) and a Catholic church (see at right).

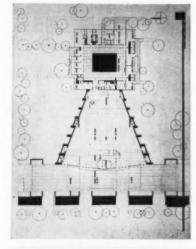
The courthouse program called for a building to house the Appellate Division of the New York State Supreme Court—"a building designed to command respect for the law." In the solution, "the courtroom, the essential functional ele-

ment of this building of justice, is treated as the most important esthetic element." It is, in fact, placed in a central unit surrounded by a most which is, in turn, surrounded by a one-story building; access is over covered bridges. The use of stained glass in the central unit is seen as further emphasizing its dignity and importance.

The church is designed to be expansible in summer via use of the vestibule, which is separated from the church proper by sliding glass panels with fixed stained glass above.



Church plan is intended to focus altention on altar, was developed to meet problem of resort with swelling summer congregations via vestibule wall of sliding glass panels. The sanctuary wall (above), facing east, is conceived in dark blue stained glass in cement to subdue morning light. Crucifixion opposite (below) is unpainted stained glass in lead





(More news on page 394)



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- 25. General Conditions of Contract: Sample Contracts
- 26. Detail Drawings and Shop Drawings 27. Cost Estimates Based on Final Plans and Specifications: Design-stage Estimating, Comparison of Project Costs
- 28. Incidental and Extra Costs
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- 31. Supervision of Construction: Architect's Overall Responsibility, Clerk-of-the-Works, Advance Appointment of the Building Custodian

 32. Insurance Coverage for School Construction
- 33. Surety Bonds on School Construction 34. Unit Costs and Their Interpretation
- 35. Timetable for School Building Projects: Sources of Delays, Adjusting Schedules
- 36. The Measure of School Building Design
- 37. Publicizing School Building Projects38. Legal Services: Needs, Checklists of Possible Legal Problems
- 39. Financing: Pay-as-you-go Plan, Selling School
- 40. Naming the School, Cornerstone Laying, and Dedication: Ceremonies, Errors and Pitfalls to be

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(Continued from page 392)

PERKINS AND WILL DESIGN OFFICE CAMPUS IN SKOKIE

New general headquarters offices "to better accommodate its expanded activities" will be built by International Minerals and Chemical Corporation near its existing research laboratories on a 21acre site in Skokie, Ill. International, which moved to Chicago from New York in 1941, explained in its announce-



The three main units of International's projected administrative center in Skokie - staff and operating divisions building, administrative building, electronic center

How to make tropical birds feel at home in Minnesota!

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Southdale Shopping Center-Architect: Victor Gruen, Associates of Los Angeles. Contractor: Johnson, Drake & Piper of Minneapolis



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THE MINDS AND METALS TO SOLVE YOUR PROBLEMS

ment that careful studies of the problem of catching up spacewise with its enormous expansion since 1941 (from \$13.6 million in sales to more than \$96.6 million for the fiscal year just ended) had resulted in the conclusions that the same reasons that impelled the move to Chicago in the first place made the Chicago metropolitan area the logical location for its permanent headquarters; and that the Skokie site, where International built its Central Research Laboratory in 1951, had the advantages not only of providing ground area for further expansion as needed, but of proximity to Chicago's O'Hare Field.

The \$3.5 million administrative center, designed by the architectural firm of Perkins and Will in collaboration with International's Engineering Division, will provide three main buildings of "unique, work-flow design," with a total floor area of 120,000 sq ft.

Largest of the buildings will be a fivestory structure housing the corporate administrative offices; the others will be a three-story building for staff and operating divisions and a one-story electronic center placed to serve all the faccilities on the site. There will also be a one-story cafeteria building, connected to the administrative building by an employe lounge-auditorium. Enclosed walkways will lead to the existing Central Research Laboratory.

Structure of the square units, each with central utility core, will be reinforced concrete, exteriors of curtain wall construction - for the administrative building, porcelain enamel and glass; for the other two, glazed brick and glass. All the buildings will be fully air conditioned, heated with ceiling radiant coil

(More news on page 396)



ACHO FINE TO DEPENDABILITY

Acme's new DD Series Flow-Therm Liquid Chillers combine the advantages of close-coupled direct drive between compressor and motor with new engineering features that make these units the most advanced large-tonnage packages on the market today. Completely enclosed, tamper-proofed control panel with pilot lights to warn of open limit switches . . . Pilot-operated regulator valves for smooth, accurate refrigerant control and increased capacity range at low superheats . . . these and many other features are worth your investigation.

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Receivers Exchangers Condensers Chillers Heat Pumps
Manufacturers of Quality Air Conditioning and Refrigeration Equipment since 1919

(Continued from page 394)

AVCO ANNOUNCES PLANS FOR ADVANCED RESEARCH CENTER

A \$15 million research and development center with a priority mission to investigate man-carrying earth satellites and missile control systems will be built by Avco Manufacturing Corporation on a 100-acre site in Wilmington, Mass. Pereira & Luckman of Los Angeles are the architects; Metcalf & Eddy of Bos-



Avco's research center at Wilmington, Mass., in two views of the model; numerous evergreens on site will be preserved



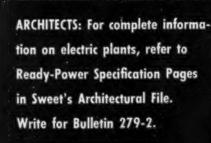
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ton the engineers. Occupancy: mid-1958. Of the three structures forming the "T", one (at left in model photos above) is a two-story research building cortaining offices and laboratories, with natural lighting provided by two interior light wells and continuous exterior windows. Its counterpart is the development building, to contain the development and electronics offices and laboratories; it is to have outdoor illumination from three interior light wells as well as continuous windows. The stem of the "T" is a "commons building" providing executive and administrative offices, a library, a circular auditorium and a cafeteria. All three buildings will be of reinforced concrete, flat slab construction with air conditioning throughout.

The fourth and largest building, set forward of the others, is the prototype testing and fabrication area, shielded from the office buildings by a wooded area which makes a natural sound baffle but connected with them by covered passageways. This one, which will have a high bay and a partial mezzanine, will be of steel frame construction.

Over 400,000 sq ft of floor area will be provided in the four buildings, which will have facilities for 1500 employes. The architects note that the center has been designed to permit 100 per cent expansion.

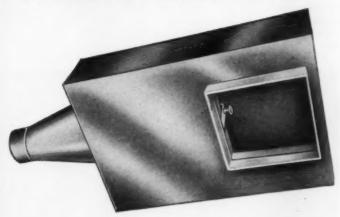
(More news on page 398)

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(Continued from page 396)

ILLINOIS HOTEL DESIGNED ON EXISTING FOUNDATION

The owners of the projected Park Ridge Plaza Hotel took over a site in Park Ridge, Ill., complete with existing foundation and footings, and asked architects Hausner & Macsai to design a motel using these for fullest economy. Also to be considered was a local zoning



a note from our own horn Century has designed and produced lighting and control equipment for more stages than anyone else in this hemisphere. That's something to remember when you begin work, say, on a school project, where the stage is the cultural center of the school and, frequently, of the whole community. And the time to call for a Century man is right at the very beginning of the planning. CENTURY LIGHTING, INC. 521 WEST 43rd STREET, NEW YORK 36, N. Y. 1820-40 BERKELEY STREET, SANTA MONICA, CALIF. 1477 N.E. 129th STREET, N. MIAMI, FLORIDA

regulation limiting buildings to four stories.

It was decided that a U-plan would provide the largest number of rooms under the circumstances, and would have the additional advantage of creating a plaza. In the center of the plaza, a smaller building will contain, on the first floor, a restaurant and coffee shop, and, on the second, meeting rooms. A reflecting pool located in the plaza will be frozen in the winter for ice skating. The first floor of the building will be set back to provide covered walking arcades, and the owners hope that the plaza, situated as it is across from Park Ridge's City Hall and a park, will become a town center.

The hotel accommodations will include 228 units and underground parking and check-in. A roof heliport is also being considered for direct connection to the airport.

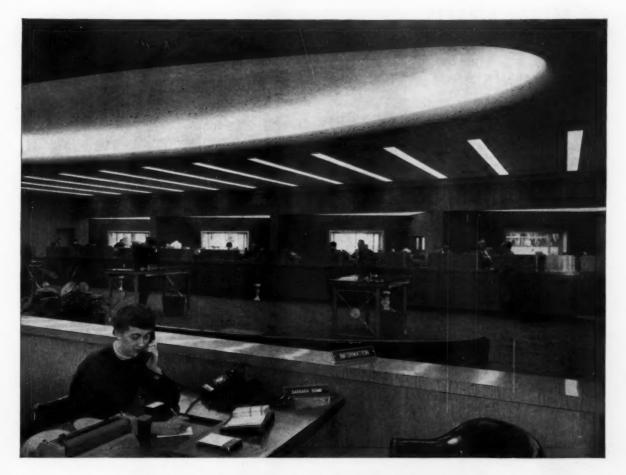
The exterior walls of the hotel will form a checkerboard pattern of glass and solid panels. For the panels, which will be light blue, the architects are considering either porcelain enamel or precast light-weight concrete panels with terrazzo finish. The upper part of the plaza building will be either porcelain enamel or precast concrete in a two-color pattern, while the ground floor exterior will be mostly glass.

The structure of the building will be concrete, the floors concrete joists and slabs with an attached ceiling containing radiant heating tubes. Each of the hotel rooms will be individually air-conditioned with wall units built through the solid panels, and the plaza building will be centrally air conditioned. The cooling towers, along with the elevator mechanism, will be located in a screened penthouse on the roof.

There is a possibility also that a swimming pool will be built on the roof.

To be built at a cost of \$2.5 million, the hotel is scheduled to get under construction in February of this year.

(More news on page 400)



LONGSPANS GIVE CLEAR SPAN OF 69 FT TO NEW MILWAUKEE BANK BUILDING

This attractive new bank building is the newest Milwaukee branch of the First Wisconsin National Bank. It embodies the latest developments in modern banking facilities -plenty of parking space, drive-in windows and after-hours depositories, among others.

An outstanding feature of the new building is its 69-ft interior clear span, made possible by the use of 70-ft Bethlehem Longspan Steel Joists. The lobby and banking area, uncluttered by columns or supporting walls, is believed to have the largest clear span of any bank building in Milwaukee.

Bethlehem Longspans gave other advantages to the builders. The open webs of these steel joists simplified the installation of pipes and conduits. The joists arrived at the job site clearly marked, ready for immediate placing. And they contribute to the fire-resistant construction of the new bank, for steel joists in combination with poured floor slab and ceilings provide fire-resistance of up to four hours, depending upon the thickness of the slab and the type of plaster used.



Citizens' Office, a branch of the First Wisconsin National Bank, at West Villard Ave. and 38th St., was designed by Edwin J. Krause, architect, of Milwaukee. General contractor: Kroening Engineering Co.; steel fabricator: Wisconsin Bridge & Iron Co.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation





(Continued from page 398)

EXPANDING BARNARD TO GET LIBRARY-CLASS BUILDING

To allow for a projected 20 per cent increase in student enrollment, Barnard College, New York City, has launched a building program with plans for a new library-cum-classroom building. The program, which calls also for a dormitory to be built at a later time, follows the



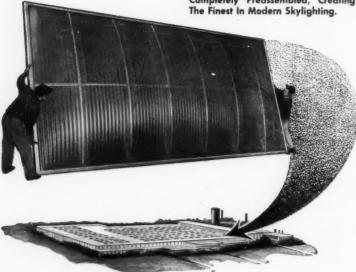
Five-slory building planned for Barnard College will provide 55,000 sq ft of space for new library, extra classrooms, student facilities

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findings of a study made by Barnard's Size-of-the-College Committee.

The library will be placed within the new building as a self-contained unit, occupying the three main floors and part of the ground floor. Stacks, with reading areas placed among them, will be located on all levels, while the main reading rooms and the reference room will be on the second floor of the building. The library will provide space for 150,000 volumes. To give easy access from the rest of the campus, the reserve book room has been planned for the first floor. Seminar rooms, typing rooms, small student conference rooms, 50 individual carrels and adequate working space for the library staff are also included in the plans.

Special Provisions

Among the special facilities are a "Treasure Room" to house the college's rare books and manuscripts, a music and language area, a room for fine arts materials, and an audio-visual room where records and tapes can be played and films and slides projected.

The space on the ground floor not taken up by the library will be given to student facilities, and the space on the top floor will be occupied by classrooms and faculty offices.

The new library, designed by architects O'Connor and Kilham, represents Barnard's second contemporary structure; the first was an addition to Barnard Hall a few years ago. The second and third floors of the library, which face the campus, will have walls of glass; the first floor will be recessed to form a loggia.

No construction schedule has been announced as yet, but the college hopes to raise the necessary \$1.8 million within the next two years.

(More news on page 402)

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(Continued from page 400)

FIRST BUILDING UNDER WAY IN DETROIT'S GRATIOT AREA

"Lafayette Park — University City," as Detroit's Gratiot-Orleans Redevelopment Project, for which Mies van der Rohe is the architect, has been officially rechristened, got under way with the apartment building shown here — "Pavilion Apartments," a project of Lafayette Park sponsors Herbert S. Green-





"...just like you said"

Available vacuum-impregnated to resist moisture, de-

When the school board saw it they exclaimed, "just like you said it would be . . . more beautiful than we thought it could be." Same old story, it happens again and again, practically every time an architect specifies an Ironbound* Continuous Strip* Hard Maple Floor.

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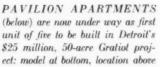
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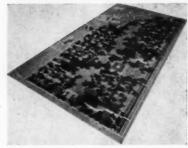
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wald and Samuel N. Katzin and also, of course, a Mies design.

The 22-story apartment tower, to cost an estimated \$3 million, will be one of Detroit's tallest buildings and the first in that city to be completely sheathed in aluminum and glass.

The development will eventually house more than 1700 families — some 1390 in five apartment towers of which Pavilion Apartments is the first and about 350 in two-story "town houses." An 18-acre park will be a feature of the development.

(More news on page 404)

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KENCO PUMP DIVISION



adjustable air diffusers Young, Richardson, Carleton & Detlie, Architects and Engineers

(Continued from page 402)

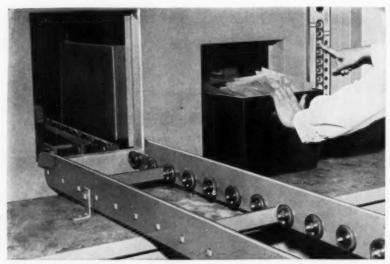
PRIVACY FOR CITY DWELLERS SOUGHT IN STUDENT SCHEMES

Enclosed front and rear lawns and a central open-air patio are key features of designs for row housing developed by students of Prof. Serge Chermayeff at Harvard's Graduate School of Design to meet "the problem of the city dweller who wishes to enjoy some of the benefits of living in the suburbs."



HOUSES FOR THE CITY as designed by Harvard Graduate

School of Design students center patio for maximum outdoor privacy



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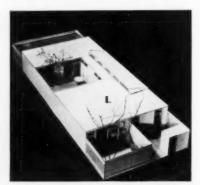
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rent RECORDLIFT installations, contact STANDARD CONVEYOR COMPANY, General Office: North St. Paul 9, Minnesota. Sales and Service in Principal Cities.







The patio and the family living room, located in the center, serve to separate bedrooms from kitchen, dining room and a small room envisioned as study, television room or maid's room. Living room, dining room and one of the bedrooms have window walls facing the patio; solid side walls insulate the houses from each other. Outside the kitchen is an enclosed yard intended to provide space for hanging family wash, locating garbage and refuse containers, and a small play-yard for children. Another semi-enclosed lawn area provides the approach to the main entrance.

The scheme is intended as a proposal for residential areas of cities or "immediate suburbs where the same living conditions prevail as are found in the cities themselves." As for cost, "Because such homes will be built where land values are high, they will be expensive," Professor Chermayeff acknowledges. "But if the land cost is not considered, then these houses will be less expensive to build than conventional houses."

(More news on page 406)

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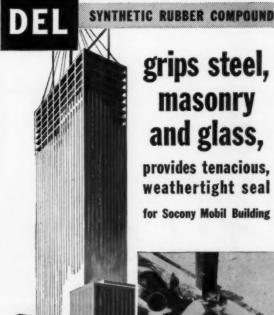
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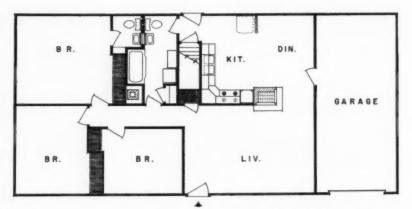
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(Continued from page 404)

KARL TREFFINGER DESIGNS NEW PREFABS FOR INLAND

Inland Homes Corporation's newest line of prefabricated houses, the "Series 700," offers 1144 sq ft of living space in a 44- by 26-ft open plan in "contemporary homes" priced to sell under \$15,000. Karl Treffinger, A.I.A., of Columbus, was the architect.

"Wide opportunity for variation" is



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Architect: Schuman & Lichtenstein, N. Y.

2 Fairhurst Unitslide Walls permit maximum use of space areas in this up-todate community center

Top: one wall, closed. Right: shows walls, units partly opened. Bottom: Head-on view shows one wall in place, other folded into pocket. Walls consist of 6 units, each 6' wide, 15' high, faced with Honduras Mahogany and Walnut.



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"Series 700" floor plan — one variation. "Note bath arrangement," says Inland, "and fireplace between living and dining areas." Below, two elevations of "Series 700" house



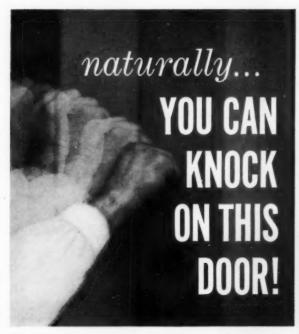


regarded by Inland as one of the important aspects of the new line. Examples of alternatives: full basements, wood floors with crawl space, or slab construction; attached or detached carport or garage; various patio designs, with new exterior wood-wall enclosures; exterior trim of brick, stone, horizontal siding, asbestos board and batten, or double-course cedar shakes; several pre-planned color combinations, including "modern pastels"; orientation with either the front or end elevation on the street side.

Inland President E. E. Kurtz has explained that Inland's purpose in developing the "700" series was "to provide true contemporary design, and the features that modern living demands, at a price the average American can afford."

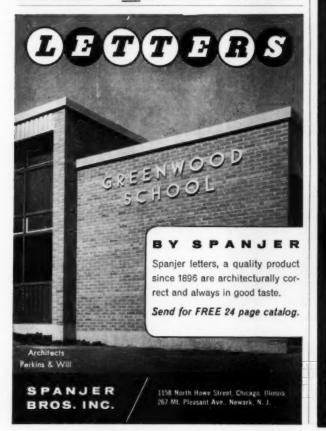
The new series provides the largest rectangular designs ever offered by Inland, which has a line of more than 80 "ranch-type" houses.

(More news on page 408)



It's designed by Paul McCobb ...and knocking on it, naturally, is but one method for determining how substantial and durable it is.

MEMBERS FOR A REAL DOOR THAT FOLDS . . SEE PAGE 148







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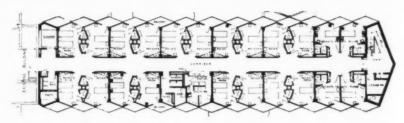
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THE RECORD REPORTS

(Continued from page 406)

TWO HOSPITAL ADDITIONS: THEY SHARE SOME PROBLEMS

These dissimilar additions for two hospitals in the South provide individual solutions for some problems common to both. Although the Tallahassee addition (72 beds) is planned primarily for more patient rooms, and the Thomasville addition (100 beds) is almost a complete hospital in itself, they were both to be



EXPANDING TWO HOSPI-TALS—new wings for Tallahassee, Fla. (above and right below) and

Thomasville, Ga. (bottom rendering and surgical floor plan) hospitals. Architects: Stevens & Wilkinson



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(a) joined to central service areas; (b) planned for further expansion; (c) designed for sun control; (d) modern yet unified with older structures.

At Tallahassee, the addition was placed behind the existing structure, making a T-shaped plan overall, and "staggered" walls alternating glass and solid panels assure privacy for patient rooms. At Thomasville, Y-shaped addition in front gives the hospital a new street elevation.

(More news on page 410)

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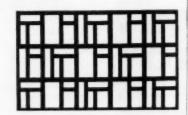
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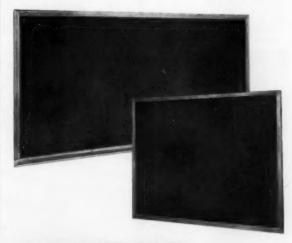
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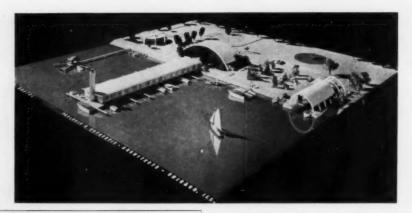
Arlington Heights, Illinois

THE RECORD REPORTS

(Continued from page 408)

BOATEL SCHEME MAKES A MOTEL FOR BOATERS

A "boatel" intended to provide moteltype accommodations for boaters has been designed for Scott-Atwater Manufacturing Company, outboard motor manufacturer, by architects Pavlecic & Kofacevic of Chicago. Scott-Atwater's idea is to stimulate better facilities for boaters, not actually to build the proj-





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BOATEL model features (left to right) pier for transient boats; circular clubhouse and recreation area; over-water housing building with front-door boat-"parking" facilities; central unit for restaurant and shops; automobile and boat trailer parking area; helicopter landing area; boat service and repair building

ect; but a model was on view at this winter's National Motor Boat Show in New York, and Scott-Atwater is offering sets of the plans to all comers at two dollars a set.

The main unit of the scheme is the one-story building containing living accommodations for traveling boaters and planned to extend over the water with "parking" for the guest's boat at the front door of each unit. The two-story building connected to the main unit is planned to house a restaurant, sundries store and space for other commercial activities. The building has a second-floor open air patio connected with the restaurant and overlooking the water.

Recreational facilities provided include a circular clubhouse, swimming pool, golf putting green and areas for other games.

Boat service and repair facilities will be located in a special building with boat ramp, power hoist and a railway to put boats into the water and take them out.

Automobiles are not forgotten in the scheme — in fact, there is provision for a larger than usual automobile parking area, since it is designed to accommodate not only the automobiles of local families who are expected to be drawn by the restaurant, shopping and recreational facilities, but also automobiles with boat trailers.

The "average" cost of such a development was estimated at \$750,000 for the entire project; individual units could, of course, be built separately.

(More news on page 412)

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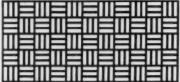
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THE RECORD REPORTS

(Continued from page 410)

NEW MAIN OFFICE BUILDING: NATIONAL BANK OF DETROIT

A rectangular 12-story office building to occupy an entire city block in the heart of Detroit's financial district is to provide the National Bank of Detroit with a new main office building containing some 580,000 sq ft of floor space. Albert Kahn Associated Architects and Engineers Inc. are architects and engineers for the project; the W. B. Ford Design Corporation has been retained as a consultant on interior decoration.

The building will be 281 ft long by 130 ft wide, and will rise 220 ft above street level. It will have the main banking floor at street level, with mezzanine and 11 floors of operational space above. An additional setback story at the top will house mechanical equipment and air conditioning machinery. There will be three



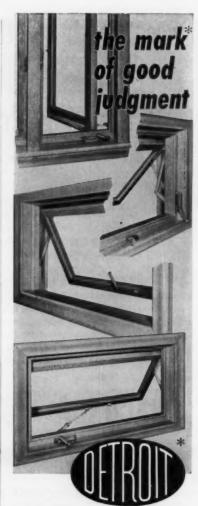
National Bank of Detroit's proposed main office building; glass area encloses banking room

floors below ground for the vaults.

"Architecturally," says the announcement from the architects, "it will be in keeping with current trends in American architecture, and in harmony with Detroit's plans for the rapidly-developing new Civic Center area, of which it will be a part."

The site is bounded by Woodward Avenue, Congress, Griswold and Fort streets. Woodward Avenue is to be widened and reconstructed into a 190-ft landscaped boulevard, extending from the Old City Hall to Jefferson, to form the main approach to the Civic Center.

A glass façade on the east side of the main banking floor will provide an unobstructed view of Woodward Avenue from the inside, and an open view of the banking room from the outside. An exterior arcade will parallel both Woodward and Fort.



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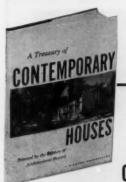
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THE RECORD REPORTS

(Continued from page 48)

property of the local districts. Similar to certain aspects of last year's proposals, this would provide Federal money to cover advances to the reserve funds of state school-financing agencies to help assure more favorable interest rates for the bonds. The fiscal 1958 budget proposes authorization of \$20 million for this purpose.

4. Expenditure of \$20 million in matching grants to states for planning to strengthen school construction programs. Running over the full four years, this sum would go for development of state programs dealing with the planning and financing of school construction. Allocations would be based on relative school-age population and would be matched by the states. The money could be used only for administrative costs of such state programs.

Throughout the President's message there was emphasis on his conviction that no permanent program of school construction assistance is needed. The lack of physical facilities was pictured as a temporary emergency situation in which Federal assistance is appropriate.

"With Federal help the states and communities can provide the bricks and mortar for school buildings, and there will be no Federal interference with local control of education," the President asserted. He urged that the program be recognized as an emergency measure designed to assist and encourage the states and communities in catching up with their needs. Once the accumulated shortage is overcome, the states and communities must meet their own needs and the Federal grant program be terminated, he declared.

The White House proposals also contained a suggestion of assistance for the construction of college and university buildings. Grants of \$7.5 million over a three-year period to promote planning for meeting post-high school needs were included. With this sum, total cost of the Eisenhower program would reach \$2077 million. The President made the point that college enrollments are expected to double, or triple, in the next 10 to 15 years. He called for efforts now to meet these future needs beyond the high school. The money would be spent in annual increments of \$2.5 million. Only a portion of this, however, would be for the planning of physical facilities.

(Continued on page 416)

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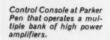
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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 414)

Almost immediately upon receipt of the White House message on Capitol Hill, Senator H. Alexander Smith (R-N. J.), member of the Senate Labor and Public Welfare Committee, introduced a new bill provisions of which embraced the Administration's complete program.

The key Democratic proposals — embodying grants totaling \$3.6 billion over a six-year period — were contained in the bill introduced earlier by Rep. Kelley (D-Pa.)

ECONOMIC REPORT SUGGESTS HOPEFUL BUILDING OUTLOOK

The Economic Report of the President, which preceded the school message by a few days, contained an urgent appeal for passage of the school building measure. No problem in developing public assets is more pressing, Mr. Eisenhower stated.

This report, the annual analysis of the nation's economic status and prospects required of the President by the Full Employment Act of 1946, sounded a moderately hopeful note for architects and engineers in its discussion of the economic situation. The President said his advisors' analysis had indicated that business capital outlays would rise during the months ahead. Surveys of business plans for capital expenditure this calendar year also pointed to some further increase above current levels. A lower rate of increase than last year was indicated, however.

The report also made these points affecting the construction outlook:

— The long-extended increase in state and local government expenditures — nearly \$3 billion per year in recent years — can be expected to continue as these units endeavor to meet the rapidly rising requirements for their facilities and services. Federal spending also is expected to be somewhat higher during the calendar year 1957 because of defense needs and obligations for essential civilian services.

— Planned expansion in public works, together with the large capital outlays of businesses and increases in institutional building, favor a high rate of total expenditure for new construction in the months ahead. Home builders' plans for the new season, however, appear to have been affected by the limited availability of mortgage investment funds, though (Continued on page 418)





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WASHINGTON TOPICS

(Continued from page 416)

recent government actions should help cushion the impact of credit restraints on home building. The reduced supply of new homes tends to create market conditions favorable to the absorption of additional construction.

— The positive elements in the current economic situation augur well for high employment which, combined with good earnings, should provide consumers with the means to spend more in the months ahead.

In its general discussion of current economic problems facing the nation the report placed the continuing upward drift of price levels second only to international complications among the significant "uncertainties."

HELIPORTS IN ROAD SYSTEM PROPOSED BY FALLON BILL

The feasibility of constructing heliports as an integral part of the national system of interstate highways would be the subject of a comprehensive investigation by the Department of Commerce if a bill proposed by Rep. George H. Fallon (D-Md.) became law.

Mr. Fallon, who is chairman of the House Subcommittee on Roads, says that "it is now apparent that in the overall planning and zoning required for the interstate system, we must take into consideration the desirability for reserving heliport space. When the great inter-state system is completed, about 13 years hence, there will then be a great need for heliport service as a vital adjunct to highway-air travel."

In the projected 41,000-mile system, Mr. Fallon noted, there will be from 15,000 to 18,000 major interchanges. The loops of these will embrace an average of 30 acres, he estimated, adding that it requires only two acres to build a heliport.

Mr. Fallon believes that great economies could result if plans were made early for the development of a system of heliports. He contends this should be done when the system is in its infancy; when land either can be obtained at no extra cost as part of the highway right-of-way, or at negligible cost.

As for the probable need for heliports, Mr. Fallon had this to say: "I am reliably informed that helicopters of tomorrow, now in the design stage, will carry 25 passengers and by 1957 the vol-

(Continued on page 420)



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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 418)

ume of air traffic will be sufficient to afford competitive rates with other air transportation for short hauls."

TIGHT MONEY AND HOUSING: BUILDERS CRY FOR ACTION

The term "tight money" became more and more a part of the building industry vocabulary during the winter months with the home builders professing crippling uncertainty regarding their 1957 plans. Congress turned its attention to the situation almost immediately, with the Veterans Affairs Committee hearings in the House capturing the spotlight early.

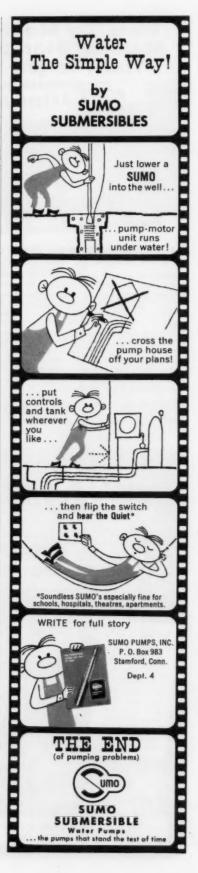
Before its hearings started, the committee, headed by Rep. Olin E. Teague (D-Tex.), issued a report on utilization of housing loans by World War II veterans which held that the program functions fairly well in metropolitan areas but gives little benefit to veterans in rural centers with populations of 25,000 or less. The committee also felt that the direct loan program had not functioned properly for two years.

Open hearings were held during the following weeks and testimony from government and industry witnesses alike favored an increase in the VA-guaranteed loan interest rate from the pegged 4.5 per cent to the five per cent current level of the FHA-insured loans. Skeptics wondered if such an increase would help very much with rates on conventional mortgages creeping upward. Committee thinking was divided, with some members expressing doubt Congress would vote an increase in the VA rate despite the stated need.

Although 1956 had wound up with a good showing in the new housing area with just over a million non-farm housing starts to its credit, the year's final months were not auspicious; and home builders were fearful the bottom would drop out of their opportunity for a good 1957 showing if Congress did not act immediately to recognize the crisis.

It appeared last month that Congress might vote increased authorization to the Federal National Mortgage Association (\$100 million to \$150 million) and thus provide stop-gap relief through the special assistance channels. Consideration of proposals for elimination of the VA program and a broadening of FHA's aids to cover veteran and non-veteran

(Continued on page 422)



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Chapter 2—The Church and the Community Suburban expansion, Relationship between church and community, Churches for new communities

Chapter 3—Planning Considerations Site selection, Entrance, The nave, Sanctuary, Chapel, Choir, Baptistry, Vestries, Lavatory accommodations, Ancillary accommodation, Parking areas

Chapter 4—Acoustics

Reverberation, Echo, Problems of partial and full congregations, Sound absorption coefficients of various materials, Conditions for preaching and music, Position of choir, Special requirements

Chapter 5—Practical Considerations

Heating: basic requirements, low-pressure hot water, hot-air, individual heaters, comparative heating esti-mates; Ventilation, Natural lighting, Artificial light-ing: requirements of various interior areas, tables of recommended illumination values, selection of fixtures, Insulation: heat insulation, sound insulation

Chapter 6-Materials

General considerations, Stone, Brick, Concrete, Plaster, Timber, Roofing materials: lead, copper, aluminum, built-up felt, asphalt, tile, slate, shingles, Floorings: wood, stone, terrazo, plastic tile, other materials, table of recommended flooring materials for various areas, maintenance

Chapter 7—Furnishings and Religious Art Seating: fixed and movable, Stained glass, Paintings, Sculpture

Chapter 8—Building Costs

Cost estimating, Percentage costs Appendix 1—Church Planning Data

Approval of authorities for all Christian churches, Altars: specifications for all Christian churches, Raptistry and Baptismal tank, Bells, Bishop's throne, Candlesticks, Altar canopy, Chancel, Chapels, Choir, Caretaker's storage, Color, Canopeum, Communion rail, Confessional boxes, Credence table, Cross, Crucifix, Dossal, Dressing cubicles, Entrances, Floor Crucitx, Dossal, Dressing cubicles, Entrances, Floor area, Floor gradient, Flower vases, Font, Footpace, Frontal, Galleries, Gradine, Holy Water stoup, Hymn-boards, Images, Lectern, Missal stand, Mortuary chapel, Narthex, Organ, Orientation, Monstrance, Notice boards, Passage-ways, Pews, Piscina, Pulpit, Reliquaries, Reredos, Ridels, Rood screens, Society, Socretary, Society, Sacristy, Sanctuary, Sanitary accommodations, Seating, Sedilia, Signals, Standards, Stations of the cross, Storage, Tabernacle, Throne for exposition, Vestries,

Appendix 2—Ancillary Accommodation

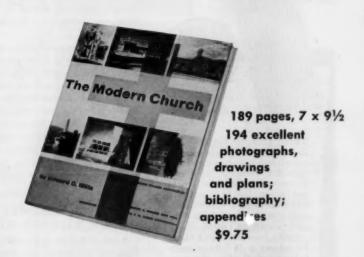
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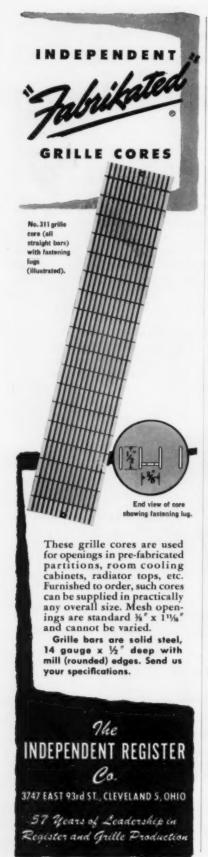
The Modern Church is a vital source of new church planning information, which will prove invaluable to anyone having to do with the design, planning, or construction of new church buildings - architect, builder, clergyman and layman alike. Although the book outlines the history and philosophy of the Christian church, it is mainly a factual, detailed work which covers new church construction step by step. Site selection, approval by church authorities, acoustics, heating, materials, furnishings and religious art, and building costs are all studied thoroughly. One of the appendices lists design specifications of each major Christian religion.

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THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 420)

alike should lead to definitive action at the next session of Congress.

Good Old Fannie May

Admittedly, FNMA had already "baled out" the home builders. They said their losses would have been far greater had not FNMA increased its mortgage-buying activities at strategic times through the postwar years. During the 18 months through the end of 1956, the agency bought some 65,000 mortgages representing a total of approximately \$752 million. Around 74 per cent of the mortgages bought and 69 per cent of the dollar value were VA-guaranteed.

As 1957 opened, FNMA had outstanding additional contracts to purchase 13,-719 VA-guaranteed mortgages for around \$153 million; standby commitments for 5068 such loans in the amount of \$64 million. As Housing Administrator Albert M. Cole put it, "The availability of mortgage funds to local lenders from the stepped-up operations of the FNMA secondary market proved to be a strategic supporting factor for the housing market."

As January ended, the agency announced a decrease in the prices it would pay for 4.5 per cent FHA-insured and Va-guaranteed loans. It was immediately predicted by builders that this reduction would put a further crimp in housing operations. The FNMA purchase prices are established within the range of prevailing prices in the general secondary market and vary by areas, by interest rates and amount of mortgagor's equity.

ARCHITECT, ENGINEER RULED OUTSIDE WAGE-AND-HOUR LAW

Another district court ruling has upheld the contention of architects and consulting engineers that their services are not subject to provisions of the Fair Labor Standards Act, sometimes called the wage-and-hour law.

The new ruling, made in Norfolk, Va., involved the firm of Loblin, McGaughy and Associates of Norfolk and Washington, a firm with considerable military work both here and abroad.

Labor Secretary Mitchell had brought action charging the firm with failure to conform with the Act, specifically to pay time and one half for hours worked in excess of 40 per week.

The district court judge's decision in (Continued on page 424)



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THE RECORD REPORTS

WASHINGTON TOPICS

(Continued from page 422)

effect indicated that Labor should look to Congress rather than the courts. On this, the decision read: "Congress may determine to broaden the scope of the Fair Labor Standards Act to include all persons remotely connected with interstate commerce." But the court ruled that architects and engineers are not covered by provisions of the existing law.

MOSS BILL WOULD ADJUST SCHOOL COST INEQUITIES

An attempt to end alleged discrimination costwise in the construction of schools under the Federal government's "Federally impacted" areas program was launched by Rep. John E. Moss (D-Cal.), with his introduction of a bill which would require the U. S. Commissioner of Education to fix per-pupil cost for such schools on the basis of contracts entered into in the previous fiscal year in comparable school districts.

Mr. Moss contends that the present system of pegging per-pupil cost on an average for all types of schools-elementary, junior and high - is unfair to architects and contractors. It results in hardship where a wide spread exists, as it does in California, for example, between the cost of building the different types. He pointed out that the Health, Education, and Welfare Department had established a rate of \$1370 per pupil for all types of schools constructed in California under the Federal Assistance Law. Recent surveys have disclosed, however, that actual construction costs run from \$1012 per pupil for elementary schools to \$1425 for junior highs, and up to \$1996 for secondary school buildings. The Moss proposal is approved by the California Department of Public Instruction.

The measure, if enacted, would of course apply to schools built under this program throughout the country.

CHEMICAL BUILDING SEEN AT \$2.5 BILLION IN TWO YEARS

The chemical industry plans to spend an estimated \$2.5 billion on new domestic construction through calendar 1957 and 1958, according to the annual survey of plans made by the Manufacturing Chemists' Association, Inc., of Washington.

(Continued on page 426)



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THE RECORD REPORTS WASHINGTON TOPICS

(Continued from page 424)

Projects brought into production in 1956 cost over \$1.1 billion, M.C.A. said. New construction, currently underway and being planned for the immediate future, involves 327 companies, all privately financed. Total cost of projects completed in 1956, plus those under construction or definitely planned for completion within the next two years, will aggregate more than \$3.6 billion, it was estimated.

M.C.A. said the large investments in new facilities are being made primarily because of the steady growth of demand for chemicals, a demand stemming both from the expanding U. S. economy and the new uses for chemical products constantly being developed through research.

Projects included in the survey have a general distribution geographically located in 406 communities in 44 states. The largest investment, \$862 million, is in organic chemicals; second largest, \$816 million, is in inorganic; and the third, \$465 million, in chemically produced metals or metallic compounds, exclusive of aluminum, processed uranium, copper, and ferroalloys.

In 1956 the industry completed \$43 million worth of new research facilities, and currently is building \$37 million more. Planned research facilities will cost nearly \$16 million, for a total expenditure of \$95 million for research buildings.

PROPOSE FEDERAL AID ON CITIES' WATER PROBLEM

Another new bill in Congress — by Rep. Wright (D-Tex.) — would aid states and cities in financing water pipelines to serve growing domestic, municipal, and industrial needs.

Under terms of the Wright bill, the Army Corps of Engineers would review each proposal for construction of water transportation facilities, determining whether a given project would be feasible, would contribute to overall water conservation in a river basin, and the extent to which it would affect flood control and navigation. When a project was found to pass these criteria, the Federal government would purchase up to one third of the bonds at the going government rate of two and a half per cent.

One provision calls for direct Federal aid in construction cost if it is decided the development would aid flood control.



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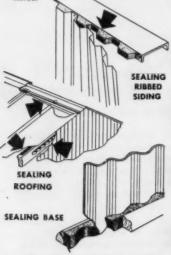
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REQUIRED READING

(Continued from page 67)

The main thesis of this stimulating book is that conventional histories of architecture are at fault because they ignore, for the most part, the motives behind the development of building. Giving many examples throughout, Lethaby shows that architecture began as an art based on conceptions of the world and the heavens above it.

For instance, we may admire esthetic values in an Egyptian temple, but its builders had very utilitarian purposes in mind; they imbued their temple with mystery, power, and magic by fashioning it in the image of the flat earth as they conceived it: above the earth was the vaulted sky, supported by four great pillars - and that is what they built (even to stars painted on the ceiling). We praise the Gothic cathedrals with their clustered piers that spread out and interlace at the top, and their windows that fill them with mysterious light. According to Lethaby, they were a natural (though probably unconscious) imitation of the forests so important in their builders' lives - forests dimly lit, made up of huge trees soaring to interlocking branches. Or, to give another of his examples, the familiar egg-and-dart molding evolved from a lotus pattern inscribed on buildings to bring good fortune. Thus, magic and nature.

This volume consists of articles the author published in *The Builder* in 1928. They are now re-published in book form. Lethaby, an English architect who died in 1931, was a scholar. One of his main aims was, as he wrote of these articles, "to open up a view of building and crafts wider than esthetic appreciation, an understanding deeper than chronological cataloguing." He did just that.

Lethaby concluded that all more recent uses of structural and decorative motifs based on ancient beliefs are false and unimpressive; "whim-work," as he termed it, results from copies not based on faith. He admitted the existence of "modern scientific building," but dismissed it as deserving to be called only "clever" or "remarkable," never "beautiful."

Perhaps we have progressed in the generation since Lethaby wrote. Perhaps we have even returned to a kind of architectural faith. To give just two examples, Lever House and the United Nations General Assembly Building in all probability should merit the description "beautiful."

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DODGE EXPANDS STATISTICS PROGRAM TO COVER ENTIRE UNITED STATES

F. W. Dodge construction contract statistics have gone national. Hereafter monthly statistical analyses will be compiled on the basis of 48-state coverage. Monthly national figures for 1956 have already been accumulated; as new monthly figures become available through 1957, progress comparisons with last year will be possible.

The program for adding western states statistics to coverage of 37 states east of the Rocky Mountains has been the result of intensive study and development for two years — an enormous and costly task.

In the original 37-state area, Dodge statistics were created as a by-product of Dodge Reports. In the West, which is not covered by Dodge Reports, it was necessary to develop from scratch completely new sources of information. This involves the cooperation of seven western universities in supervising collection of the statistics, and of hundreds of building officials; it also involves addition of numerous people to the Dodge staff both in the West and in New York, where the tabulation is done.

Not the least of the problems involved in going West turned out to be the necessity for complete revision of the coverage of one- and two-family private housing in the 37 eastern states. The reasons for this were complex; suffice it to say that it was necessary, in order to get comparable figures for the East and West which could be spliced together, to develop entirely new methods in the eastern states. This again involves the cooperation of thousands of building officials.

With the exception of one- and twofamily private housing, the basis for the figures in the East continues to be Dodge Reports; and the field staff which functions through more than 80 offices in gathering Dodge Reports will also assist in securing the residential data on the new basis.

The importance of the expansion of construction contract coverage can hardly be overemphasized. The value of the figures is perhaps best illustrated

by the wide attention paid to the original series in spite of its limitation to 37 states. The old series has been one of the very few privately-produced sets of statistics published each month by the President's Council of Economic Advisers in its basic "Economic Indicators"; it has appeared regularly also in the Survey of Current Business, the Statistical Abstract of the United States, the Federal Reserve Bulletin and the Construction Review. Several hundred newspapers carry the figures each month. The National Bureau of Economic Research, after years of searching for economic indicators which consistently lead the upturns and downturns of the so-called business cycle, listed two of the Dodge series among the eight leading indicators it finally turned up. And, of course, many of the nation's most successful corporations have long used the Dodge statistics for marketing purposes, sales and production control and economic analysis.

If all this was true of the 37-states series, it should be infinitely more true of the new, complete figures. Among the key features of the new construction contract series are these:

— It will, as always, be a forward-looking series, anticipating sales of construction materials and services which will take place in the future.

— It will provide the only geographic breakdown of the whole construction industry, with detailed figures for regions, states and major metropolitan areas.

 It will be prompt, with the figures appearing during the month following the period covered.

 It will provide realistic data on the value of construction contracts, by building type and by area.

— It will provide a measure of the physical volume of construction (floor area) on the same detailed basis.

Only a handful of private companies produce important economic statistics. F. W. Dodge Corporation, because of its unique services and its close relationship to construction factors, is the natural

source of the basic data on the industry. Even the Federal government's overall series on the value of new construction is based to a considerable degree on information furnished by Dodge.

Dodge has long recognized the widespread interest in its statistics for purposes of economic policy-making by government and private organizations. It has, therefore, made public without charge essential information which is of a basic economic nature, and it will continue to do so through some 150 different press releases each month. The detailed statistical services which may be used for marketing analysis, sales or production control and similar purposes, are available on a contract basis.— George Cline Smith

HOUSING TREND IS UP IN CONVENTIONAL MORTGAGES

The conventionally financed house field—top source of house clients for private architects—has become increasingly important while FHA- and VA-financed housing has been suffering its much-publicized decline.

U. S. government figures on financing of nonfarm housing starts show an increase in starts financed with conventional mortgages from 49 per cent of total starts in 1955 to 59 per cent in 1956; in January 1957, 68 per cent of starts were conventionally financed.

The comparison for privately financed nonfarm housing starts classified by type of financing for fourth quarter 1955 and fourth quarter 1956:

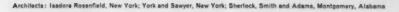
| min someth danse | | |
|------------------|---------|---------|
| | 1955 | 1956 |
| Total starts | 266,700 | 234,400 |
| VA- and FHA- | | |
| financed | 136,900 | 95,800 |
| Conventionally | | |
| financed | 129,800 | 138,600 |
| In January: | | |
| | 1956 | 1957 |
| Total starts | 73,700 | 62,200 |
| VA- and FHA- | | |
| financed | 36,000 | 19,800 |
| Conventionally | | |
| financed | 37,700 | 42,400 |

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